

# Chapter 13

# Transportation

## Ports and Transportation

Essential to a region's economic viability in today's global market is the ability to inexpensively, rapidly transport people, products and services from one location to another. A region's transportation assets and the management of its transportation facilities may determine whether businesses will relocate or expand in that region. With American products now vying for consumers around the globe, economic development agencies have to constantly redefine and reassess their goals and objectives to keep America competitive. Ohio's

strategic location between Lake Erie to the north and the Ohio River to the south and southeast gives the state a competitive advantage to transport products to America's heartland.

Ohio is centrally located within one day's drive of nearly 70 percent of North America's manufacturing capacity. Although only 35th in geographic size, Ohio has the 10th largest highway network and the fourth largest interstate highway system in the country. Ohio has more than 3,000 miles of four-lane divided highways extending to every region of the state – including interstates 70, 71, 74, 75, 76, 77, 80 and 90, as well as 12 arterial interstate corridors and beltways.

Interstate 90, which travels east-to-west through the northernmost portion of the state, entirely within the Lake Erie watershed, is the nation's longest interstate highway, spanning from Boston to Seattle. The Ohio Turnpike, comprising portions of interstates 76, 80 and 90, also travels the complete length of Ohio's northern landscape. Approximately 195

*The William G. Mather steamship is now a permanently docked museum in Cleveland's North Coast Harbor*

miles of the Ohio Turnpike, mainly I-80 and the multiplexed section of interstates 80 and 90 between Elyria and the Indiana line, travel within the Lake Erie Watershed. Interstate 80, like I-90, travels the complete length of the country, between Teaneck, New Jersey (near New York City) and San Francisco. Ohio's north-south interstate corridors include I-71, I-75 and I-77. The northernmost terminus for both I-71 and I-77 is at I-90 in downtown Cleveland. The I-71 corridor travels diagonally through Ohio in a northeast-to-southwest direction connecting the state's three largest urban centers, Cleveland, Columbus and Cincinnati. I-71 subsequently enters Kentucky, ending in Louisville.

From Cleveland, the I-77 corridor travels southward through Akron, Canton and into Appalachia. The southernmost terminus for I-77 is Columbia, South Carolina. The I-75 corridor transits from Kentucky to Cincinnati and travels north through Dayton, Toledo and into Michigan. In its entirety, I-75 spans the country longitudinally, connecting Fort Lauderdale, Florida with Sault Ste Marie, Michigan. The eastern corridor of Interstate 76 (disconnected from the western I-76 corridor in Colorado and Nebraska) enters Ohio near Youngstown and travels through Akron before ending at I-71 near Lodi. In Pennsylvania, I-76 serves as the state's turnpike. The Interstate 74 corridor begins at I-75 in

Cincinnati and extends west through Indianapolis, Indiana and Peoria, Illinois, and ends in Bettendorf, Iowa, one of the Quad Cities.

Ohio also has an extensive Class I rail network, 11 active public water ports, and 38 major airports serving virtually all regions of the United States. From Ohio, goods can be shipped or received within a day to or from Atlanta, Chicago, Detroit, New York, St. Louis, New Jersey, Ontario (Canada) or the Mid-Atlantic Coast. Ohio is also the fourth largest U.S. maritime state in terms of total tonnage moved, according to the Ohio Department of Transportation.

This complex multi-modal network links the state by water, rail, highway and air to support a diverse economy.

## Canals

Transportation development has always been tied to Ohio's economic development. The opportunity to connect Ohio with the prosperous eastern markets became a reality in 1817 when New York broke ground on a canal connecting Lake Erie with the Hudson River and New York City. Then in 1822, the Ohio legislature commissioned the first canal feasibility survey in an effort

to bring a modern, reliable transportation system to the growing state. On July 4, 1825, at Licking Summit south of Newark, work began on the Ohio-Erie Canal. Two weeks later in Middletown, ground breaking was held for the Miami-Erie canal.

In 1855, revenue receipts of canals were at their highest. At this peak, Ohio's canal system consisted of almost 1,000 miles of main-line canals, feeders and side cuts. It was also in 1855 when the impact of railroad transport began to flourish, thus reducing the dependency on the canals. Ohio's canal system came to an abrupt end on March



## Mileage Chart

	Ashtabula	Avon Lake	Bowling Green	Cleveland	Conneaut	Elyria	Euclid	Fremont	Huron	Jefferson	Lakewood	Lorain	Marblehead	Mentor	Oak Harbor	Oregon	Painesville	Perrysburg	Port Clinton	Sandusky	Toledo	Vermilion
Ashtabula		83	184	61	19	90	49	145	113	10	69	89	139	38	148	170	32	171	137	125	176	102
Avon Lake	83		108	23	94	14	34	69	37	80	16	12	63	47	72	94	52	95	61	49	100	26
Bowling Green	184	108		124	196	101	136	29	77	182	118	99	70	149	45	25	154	13	57	71	25	91
Cleveland	61	23	124		71	30	12	85	53	58	9	29	79	25	89	110	30	111	77	65	116	82
Conneaut	19	94	196	71		101	60	155	124	21	79	100	150	49	159	181	43	182	148	136	187	113
Elyria	90	14	101	30	101		41	60	29	87	23	9	55	54	66	85	59	87	53	41	91	18
Euclid	49	34	136	12	60	41		96	64	47	20	40	90	14	100	121	19	122	88	76	127	53
Fremont	145	69	29	85	155	60	96		34	142	79	59	31	110	12	33	114	35	16	24	40	47
Huron	113	37	77	53	124	29	64	34		111	47	25	27	78	36	62	83	64	25	13	68	11
Jefferson	10	80	182	58	21	87	47	142	111		66	86	136	36	146	167	29	169	134	122	173	99
Lakewood	69	16	118	9	79	23	20	79	47	66		22	72	33	82	103	38	105	70	58	109	35
Lorain	89	12	99	29	100	9	40	59	25	86	22		50	53	60	84	58	85	48	36	90	10
Marblehead	139	63	70	79	150	55	90	31	27	136	72	50		104	24	47	109	56	11	21	53	41
Mentor	38	47	149	25	49	54	14	110	78	36	33	53	104		113	134	8	135	101	89	140	66
Oak Harbor	148	72	45	89	159	66	100	12	36	146	82	60	24	113		24	118	32	12	30	36	50
Oregon	170	94	25	110	181	85	121	33	62	167	103	84	47	134	24		139	12	35	56	6	76
Painesville	32	52	154	30	43	59	19	114	83	29	38	58	109	8	118	139		141	106	94	145	71
Perrysburg	171	95	13	111	182	87	122	35	64	169	105	85	56	135	32	12	141		43	58	12	78
Port Clinton	137	61	57	77	148	53	88	16	25	134	70	48	11	101	12	35	106	43		19	48	39
Sandusky	125	49	71	65	136	41	76	24	13	122	58	36	21	89	30	56	94	58	19		62	27
Toledo	176	100	25	116	187	91	127	40	68	173	109	90	53	140	36	6	145	12	48	62		82
Vermilion	102	26	91	82	113	18	53	47	11	99	35	10	41	66	50	76	71	78	39	27	82	

Prepared by ODNR Office of Coastal Management

Distances from [www.mapquest.com](http://www.mapquest.com)

23, 1913, after heavy winter snow-fall and storms dumped abnormally high amounts of precipitation on the state, destroying some of the canals' infrastructure.

### **Great Lakes Canals**

Modern canals have paved the way for international trade through Great Lakes ports. These canals aid lake-to-lake transportation previously impossible due to varying lake elevations.

The first attempt to construct canals to connect the Great Lakes began in 1680 when a Canadian priest from Montreal attempted to build a 5-foot deep canal bypassing the Lachine Rapids between Lake St. Louis and Montreal. The canal was finally completed in 1824, just nine years before the first version of the Welland Canal, a linkage between Lake Erie and Lake Ontario, opened. Built by the Welland Canal Company, this 1833 version was 27 miles long and consisted of a series of 40 wooden locks. It would be replaced and/or improved several times before and after the construction of today's Seaway System, which began in 1954. Prior to the Seaway, large freighters crossing the Atlantic with cargo bound for the Great Lakes stopped at Montreal and transferred their cargos into shallow draft canal size boats. These smaller boats made their way up the canal system and the cargo was transferred back to Great Lakes freighters.

Minnesota Congressman John Lind is given credit for proposing a deep draft shortcut to North America's vast heartland in the 1890s. In 1895 the first joint U.S.-Canadian Deep Waterways Commission formed to study the feasibility of a Seaway. It was followed by the International Joint Commission in 1909; however, the Seaway vision was postponed due to two world wars. In 1949, increasing public interest for a deeper waterway on the St. Lawrence River and mounting trade demands led to the U.S.-Canadian Deep Waterways Commission to once again study the feasibility of what would eventually become the St. Lawrence Seaway.

In 1951, Canada began navigation works on their side of the river from Montreal to Lake Ontario and in the Welland Canal. At the same time, a joint U.S.-Canadian project began power work in the International Rapids section of the St. Lawrence. The United States also began work on the Wiley-Dondero Canal that would bypass the International Rapids.

Finally in September of 1954, work on the Seaway itself began, marking a new era in transportation history. The United States' established the U.S. Saint Lawrence Seaway Development Corporation (SLSDC), and Canada's Parliament established the St. Lawrence Seaway Authority (which would later

become the St. Lawrence Seaway Management Corporation (SLSMC)) to work toward the common goal of constructing the Seaway. The SLSDC and SLSMC still fulfill the role of jointly managing the system.

On April 25, 1959, the icebreaker vessel *D'Iberville* first transited the St. Lawrence Seaway. The Seaway officially opened on June 26, and was inaugurated by Queen Elizabeth and President Eisenhower. At the time of its opening, more than 80 percent of ocean-going vessels would fit through the Seaway System. The cost of the navigation project was \$470.3 million, of which Canada paid \$336.5 million and the United States paid \$133.8 million.

### **Shipping**

The Great Lakes/St. Lawrence Seaway stretches more than 2,340 miles from the Atlantic Ocean to the heart of North America, covering 94,000 square miles of water and more than 10,000 miles of coast. Today, the Great Lakes/Seaway System is the most cost-efficient route to the mid-continent.

Studies also show that Great Lakes ports have lower port costs than competing ocean ports for the handling, wharfage, dockage and stevedoring of iron ore, steel coils and machinery. Steel shippers save between \$3 to \$50 per ton on shipments routed through Great Lakes ports rather than through east coast or

Gulf ports. Stevedoring costs for steel products average about \$2.20 per ton lower at Great Lakes ports.

This highly competitive transportation route is one of the world's most strategic commercial waterways; however, a 2002 U.S. Army Corps of Engineers study shows that just 13 percent of the world's merchant fleet (and 5 percent of the container fleet) can be accommodated by the Seaway's locks and channels. Aging infrastructure (43 to 70 years of age) needs a major retrofit, with current maintenance requirements necessitating a winter shutdown and increasing repair costs as time goes by.

Currently the Corps is involved in a unique bi-national study, called the Great Lakes St. Lawrence Seaway Study (GLSLS Study) to determine current baseline information for environment and engineering features and economic conditions of the Great Lakes St. Lawrence Seaway System. The study will evaluate the social, environmental and economic impacts of future investments to operate and maintain the existing navigation system. The GLSLS Study was formally initiated in May 2003 pursuant to a Memorandum of Cooperation between Transport Canada and the U.S. Department of Transportation. A report on its findings and conclusions will be issued after completion of the study planned for fall 2006.

Commercial navigation on the Great Lakes is dominated by the

transport of raw materials for steel making, coal-fired power production and construction materials such as limestone, cement, stone and gravel. The system includes 47 deep-draft ports and 55 shallow-draft harbors. Total annual commerce on the Great Lakes averages more than 175 million tons, generates \$5 billion annually in income and directly supports 67,000 jobs.

Along Ohio's 312-mile coast, 77 manufacturing facilities, terminals and docks shipped and received freight tonnage in 2001. Corps statistics show that around 60 million tons of commodities move to, from and within Ohio on the Great Lakes annually. The annual value of these shipments is \$5.7 billion with coal (39 percent) and iron ore (22 percent) comprising the majority of the state's total tonnage.

Later in this chapter, maps and text highlight Ohio's ports and ferry terminals including those in Conneaut, Ashtabula, Fairport Harbor, Cleveland, Lorain, Vermilion, Huron, Sandusky, Kelleys Island, Marblehead, Catawba Island, the Bass Islands, Port Clinton and Toledo.

## **General Transportation**

### **Port of Toledo**

### **Port of Marblehead**

### **Port of Kelleys Island**

### **Port of Sandusky**

### **Port of Huron**

### **Port of Lorain**

### **Port of Cleveland**

### **Port of Fairport Harbor**

### **Port of Ashtabula**

### **Port of Conneaut**

### **Bridges**

### **Lake Erie Shipwrecks**

# Transportation



Coal Hopper cargo, Cleveland

## Cargo Rail

Transporting goods to and from Ohio's Lake Erie ports is one of the functions of the state's extensive railroad system which includes 4,525 miles of operating Class I Railroads. According to the Association of American Railroads and Surface Transportation Board, a Class I Railroad is a railroad with year 2002 operating revenues of at least \$272 million.

There are three freight Class I Railroad operators in Ohio including CSX Transportation (2,332 miles of track), Norfolk Southern Corporation (2,233 miles of track) and Grand Trunk Corporation (nine miles of track). There are 31 additional freight railroads operating in Ohio, including two regional lines totaling 561 miles; 13 local lines totaling 1,043 miles; and 16 'Switching & Terminal' railroads with 393 miles of circuit. In all, 34 freight railroads operate in Ohio covering 5,230 miles of track (excluding trackage rights).

According to the Association of American Railroads 2002 statistics, more than 6.1 million carloads hauling more than 300.3 million tons of freight traveled within Ohio's borders. The top commodities originating from Ohio via rail included primary metal products

(9.7 million tons), metallic ores (8.7 million tons), farm products (8.4 million tons), coal (8.2 million tons), and nonmetallic minerals (6.5 million tons). The top commodities arriving to Ohio via rail included coal (42.4 million tons), primary metal

products (10.3 million tons), chemicals (8.4 million tons), nonmetallic minerals (6.9 million tons), and metallic ores (4.7 million tons). In total, Ohio's railroad system shipped nearly 63 million outgoing tons of freight and received 97.6 million tons.

Various maps throughout the Atlas show railroad transportation routes in Ohio's Lake Erie watershed.

## Passenger Rail

Rail service in the Buckeye State includes several Amtrak passenger tracks and urban transit corridors. There are four Amtrak service lines in Ohio; three



The Sandusky Amtrak Station

of which travel completely or partially within the Lake Erie Watershed.

The 'Capitol Limited' line is an east-west route connecting Washington D.C. with Chicago via Alliance, Cleveland, Elyria, Sandusky and Toledo.

The 'Lakeshore Limited' route travels completely within the Lake Erie Watershed and does not stray far from the lake along its Ohio route. The Lakeshore Limited runs from Boston and New York City to Chicago and passes through Cleveland, Sandusky and Toledo.

The 'Three Rivers' Amtrak route travels from New York City to Chicago, and passes through Pittsburgh, Youngstown, Akron and Fostoria.

The fourth track, the 'Cardinal/ Hoosier State,' is the only southern Ohio Amtrak route. It links New York City with Chicago, via Washington D.C. and Cincinnati. In all, there are 11 Amtrak stations in Ohio, seven of which are located within the Lake Erie watershed. The complete list of Ohio stations includes Akron, Alliance, Bryan, Cincinnati, Cleveland, Elyria, Fostoria, Hamilton, Sandusky, Toledo and Youngstown.

The Greater Cleveland Regional Transit Authority (RTA) offers Cuyahoga County residents rail accessibility on four 'Rapid Transit' lines, including the 'Waterfront Line,' a route linking Public Square/Tower City with the east bank of the Cuyahoga River (The Flats district) and North Coast Harbor. Additionally, the 'Red Line' Rapid Transit

route links Public Square commuters with Cleveland Hopkins International Airport. All Rapid Transit stations provide further service with the RTA's extensive network of commuter buses.

## Airports

Aviation is an important component of Ohio's economy, history and transportation system. It is estimated at a \$7.4 billion annual industry, and every year approximately 460,000 scheduled and 4 million unscheduled flights take off or land in Ohio. Annually more than 10 million people depart from Ohio's eight busiest airports via scheduled air service. Half of those airports are in Lake Erie coastal counties including: Cleveland Hopkins International (5.6 million people - Ohio's busiest airport and 35th busiest nationally), Toledo Express (329,000 people), Put-in-Bay Airport on South Bass Island (13,000 people) and Erie-Ottawa Regional also known as the Carl R. Keller Field (11,000 people), according to the Ohio Department of Transportation.

According to ODOT's Freight Impact study, approximately 580,000 tons of domestic freight is shipped by air. For calendar year 2002 in Ohio, Toledo Express-Burlington Express had the 2nd highest total air cargo landing at the port with more than 945 million pounds (31st highest nationally). Cleveland-Hopkins International tallied the 4th highest statewide (60th nationally) with more than 462 million pounds. The study projects that by 2020, Ohio's air freight traffic will increase nearly 60 percent to 880,000 tons.

Each coastal county has at least one commercial airport. Lorain County has the most with five, followed by Erie, Ottawa and Wood counties with four airports each. Cuyahoga County has three, including Cleveland Hopkins International Airport and Burke Lakefront Airport located in downtown Cleveland. Ashtabula, Lake and Sandusky counties each have two commercial airports and Lucas County has one.

Today every Ohio business, citizen and tourism center is within a 30 minute drive to an airport. Nationally, Ohio

Flight Operations, Aircraft Maintenance and Aviation Programs.

The Flight Operations section supplies aircraft and pilots for missions that include transportation of state officials and ODOT employees, aerial photo work for ODOT's Aerial Engineering Office, aerial support for the Bureau of Criminal Investigation (BCI) in their drug interdiction work, and a wide variety of specialized aerial support for the Ohio Department of Natural Resources (ODNR), ranging from aerial application of pesticides to wildlife survey and management.

## Enplanements at Ohio Airports Coastal Counties

Airport	Enplanements		Coastal Rank		Ohio Rank		National Rank	
	2001	2002	2001	2002	2001	2002	2001	2002
Cleveland Hopkins Int'l	5,633,495	5,146,975	1	1	1	1	35	38
Toledo Express	329,329	323,988	2	2	5	5	137	136
Erie-Ottawa Regional	10,933	10,065	3	4	7	7	402	389
Put-in-Bay	10,693	13,013	4	3	8	6	405	306

Source: FAA Calendar Year 2001, 2002 Enplanement and All-Cargo Reports; Air Carrier Activity Information System (ACAIS)

ranks 5th with 106 airports included in the Federal Aviation Administration (FAA) National Plan of Integrated Airport Systems (NPIAS), which identifies airports that are significant to national air transportation. Ohio also ranked 5th in the nation in the ratio of NPIAS airports to land area, with one NPIAS airport every 423 square miles. There are also nine public use heliports in the state and 743 privately owned/private use airports and heliports.

Approximately 18,000 Ohioans are Federal Aviation Administration (FAA) registered pilots; this means one out of every 634 Buckeyes is a pilot. Approximately 11,000 FAA registered aircraft exist in Ohio.

Within ODOT, the three sections that make up the Ohio Office of Aviation are

The Aircraft Maintenance section maintains the State's diverse fleet of aircraft and has distinguished itself by being certified as a Federal Aviation Administration (FAA) Aircraft Repair Station. The Aircraft Maintenance section is responsible for the operational reliability of the 27 fleet aircraft that are routinely flown 12,000 hours annually by the Office of Aviation, the Ohio Highway Patrol and ODNR.

The responsibilities of the Aviation Programs section include airport planning, engineering, and grants administration; airport pavement and airport safety inspections; airspace protection; aircraft registration; aviation education publications; and enforcement of Ohio aviation laws.

# Transportation

## Ferry Service

A ferry is a boat or ship that transports people or vehicles across a body of water and operates on a regular schedule. Ferries are an important part of the public transportation system and play a vital economic role in Ohio's Lake Erie islands' tourism industry.

Ferries depart ports in Sandusky, Marblehead, Catawba Island and Port Clinton bound for four primary islands – South Bass (i.e. Put-in-Bay), Kelleys, Middle Bass and Canada's Pelee Island. Some vessels carry just passengers while others are capable of transporting full-size tractor trailers to and from the islands.

Water transportation companies in Ohio are regulated by the Public Utilities Commission of Ohio (PUCO). According to PUCO's website, five water transportation companies exist in Ohio today including:

- The Island Express Boat Lines, Ltd., which formerly operated the Island Rocket;
- The Kelleys Island Ferry Boat Lines, Inc., which runs from Marblehead to Kelleys Island transporting both people and vehicles;
- The Miller Boat Line, Inc., which runs from Catawba Island to South Bass and Middle Bass islands transporting both people and vehicles;
- The Put-In-Bay Boat Line Company which operates the Jet Express which transports passengers only from both Port Clinton and Sandusky to Kelleys and South Bass islands; and
- The Sonny-S Boat Line, Inc. which runs passengers only between South Bass and Middle Bass islands.

Ferries and private watercraft bring more than 2 million visitors annually to the two- by four- mile South Bass Island and bring many additional visitors to



The Miller Ferry

the other islands. Ferries, however, are the primary transporter of the goods consumed by island residents and visitors that are not produced on the islands. This includes clothing, food, drinks and gasoline.

While the ferries are busiest during summer months, at least two of the ferries operate on Lake Erie until the lake freezes and resume operation as soon as the ice cover has decreased enough to permit safe travel. Without the regular daily ferry service, island residents' means of traveling to mainland for a doctor's appointment or to get fresh milk and bread include plane or a hovercraft-style boat.

A Canadian ferry company operates two ferries that transport passengers

and motor vehicles to Pelee Island. The *Islander* and its larger cousin the *Jiimaan* run from Leamington, Ontario, and Sandusky, Ohio to Pelee Island, Ontario, throughout the summer months. Two additional north coast Ohio communities, Cleveland and Painesville Township, are considering plans for ferries that would carry cars, trucks and passengers across Lake Erie to ports in Canada.

In addition to ferries, numerous companies operate water cruises on Lake Erie such as the *Goodtime I* which runs from Sandusky to the islands, and the *Goodtime III* which operates sightseeing trips from Cleveland's North Coast Inner Harbor.

### Comparative Lake Erie Water Port Traffic (in thousands of short tons)

Port	1999	2000	2001	2002	2003	5-yr Total
Cleveland	15,540	14,391	11,938	11,412	12,621	65,902
Toledo	12,327	13,322	10,535	11,115	9,864	57,163
Ashtabula	10,495	12,322	10,934	9,838	10,427	54,016
Conneaut	8,868	10,603	10,485	10,474	6,705	47,135
Lorain	12,968	14,180	7,865	6,672	2,154	43,839
Sandusky	4,898	3,645	4,649	4,455	4,183	21,830
Fairport Harbor	2,553	2,539	2,942	2,326	2,526	12,886
Huron	1,154	1,275	1,260	898	1,291	5,878
Kelleys Island	1,081	798	1,050	1,289	1,071	5,289

Source - U.S. Army Corp of Engineers, *Waterborne Commerce of the United States, 2003*

#### CATAWBA ISLAND

**Latitude:** + 41.3351 North  
**Longitude:** - 82.5023 West

#### MIDDLE BASS ISLAND

**Latitude:** + 41.6747 NORTH  
**Longitude:** - 82.8095 WEST

#### PORT CLINTON

**Latitude:** + 41.5162 NORTH  
**Longitude:** - 82.9477 WEST

#### SOUTH BASS ISLAND

**Latitude:** + 41.6439 NORTH  
**Longitude:** - 82.8372 WEST

(See Kelleys Island, Sandusky and Marblehead latitudes/longitudes on their port pages)

#### For more information/ Sources:

Ohio Department of Transportation (ODOT)  
1980 W. Broad Street  
Columbus OH 43223  
Tel: (614) 466-7170  
Fax: (614) 644-8662  
Web: dot.state.oh.us/

ODOT, Access Ohio 2004-2030 Statewide Transportation Plan  
Web: dot.state.oh.us/planning/File%20Directory/AccessOhio.htm

ODOT Office of Aviation  
Web: dot.state.oh.us/aviation

"Access Ohio 2004-2030: Statewide Transportation Plan," Ohio Department of Transportation, November 2004

The Saint Lawrence Seaway Development Corporation  
180 Andrews Street  
Massena NY 13662  
Tel: 315-764-3200  
Fax: 315-764-3235 www.seaway.dot.gov

The Great Lakes St. Lawrence Seaway System  
Web: www.greatlakes-seaway.com

U.S. Army Corp of Engineers, Navigation Data Center  
7701 Telegraph Rd.  
Casey Bldg.  
Alexandria VA 22315  
Tel: 703-428-9061  
Web: iwr.usace.army.mil/ndc/ports/ports.htm

Great Lakes St. Lawrence Seaway Study  
Tel: 313-226-3573  
Web: lre.usace.army.mil/greatlakes/

Lake Carriers' Association  
Suite 915  
614 West Superior Avenue  
Cleveland OH 44113-1383  
Tel: 216- 861-0592  
Web: lcaships.com

Association of American Railroads  
50 F Street NW  
Washington DC 20001-1564  
Tel: 202-639-2100  
Web: aar.org  
Statistics for Ohio, 2004  
Web: aar.org/PubCommon/Documents/AboutTheIndustry/RRStateOH.pdf?states=RRState OH.pdf

The Greater Cleveland Regional Transit Authority, Main Office  
1240 W.6th Street  
Cleveland OH 44113-1331  
Tel: 216.566.5100  
Web: gcrtc.org/maps.asp

Amtrak  
Tel: 1-800-USA-RAIL  
Web: amtrak.com

Great Lakes St. Lawrence Seaway Study  
Web: glsls-study.com



Jet Express docked in Sandusky, Erie County



Cleveland port facility – Photo by the Cleveland-Cuyahoga County Port Authority

# General Transportation



Large freighter on Lake Erie



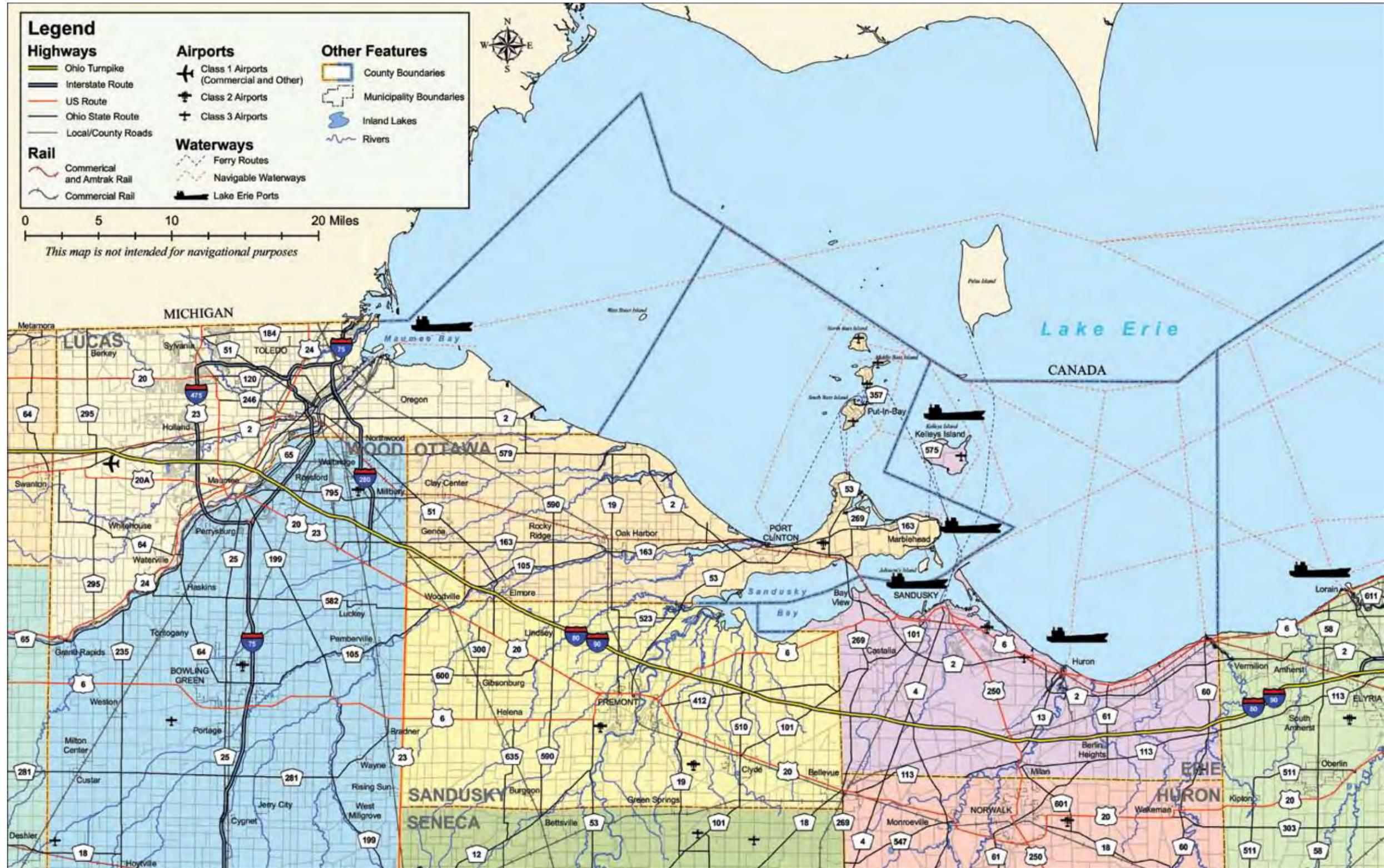
State Route 2 in Erie County



State Route 2 in Erie County

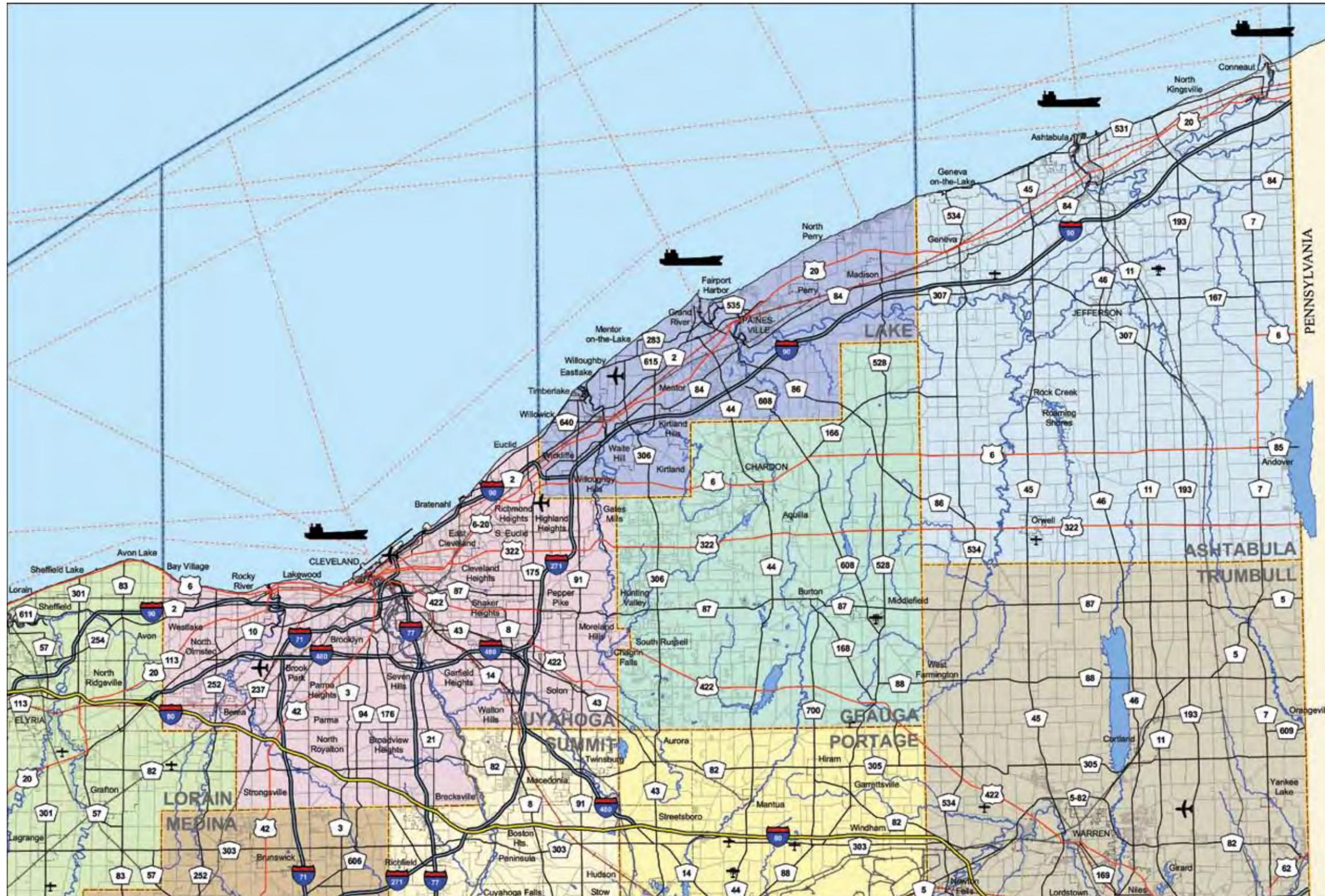


Railroad



Map 55 GIS data citation in Appendices

# General Transportation



Map 55 GIS data citation in Appendices

## Maritime Museums List (partial)

Great Lakes Historical Society  
 Peachman Lake Erie Shipwreck Research Center  
 480 Main Street  
 PO Box 435  
 Vermilion, OH 44089  
 Tel: 440-967-3467  
 Web: [inlandseas.org](http://inlandseas.org)  
[shipwreck@inlandseas.org](mailto:shipwreck@inlandseas.org)

Fairport Harbor Marine Museum  
 129 Second St.  
 Fairport Harbor, OH 44077  
 Tel: 440-354-4825  
 Web: [neweb.com/org/fhlh](http://neweb.com/org/fhlh)

Historical Collections of the Great Lakes  
 Bowling Green State University  
 University Libraries  
 Bowling Green, OH 43403  
 Tel: 419-372-9612  
 Web: [bgsu.edu/colleges/library/hcgl](http://bgsu.edu/colleges/library/hcgl)

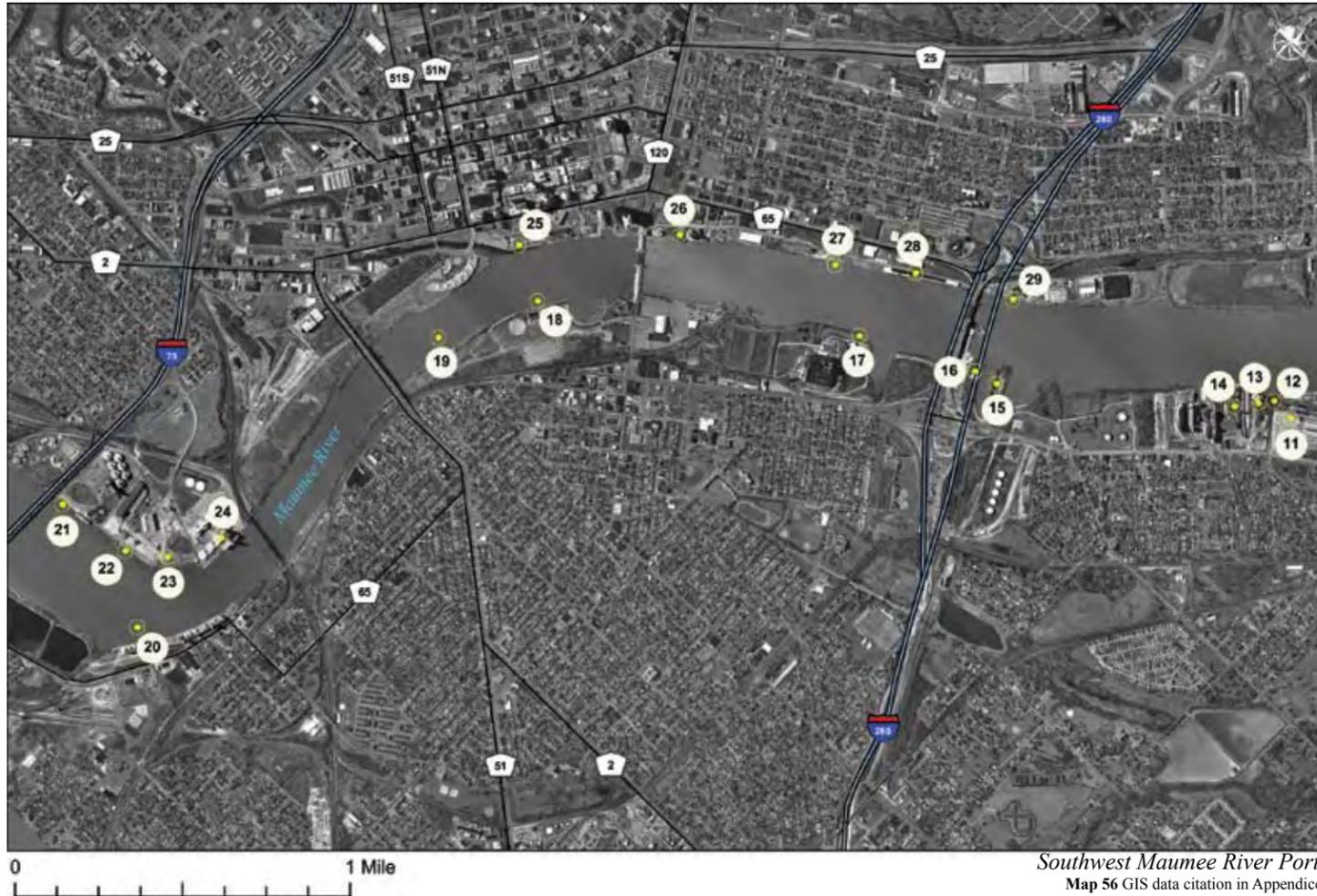
Lake Erie Islands Historical Society Museum  
 PO Box 25  
 Put-in-Bay, OH 43456  
 Tel: 419-285-2804  
 Web: [leihs.org](http://leihs.org)

Maritime Museum of Sandusky  
 125 Meigs Street  
 Sandusky, OH 44870  
 Tel: 419-624-0274  
 Web: [sanduskymaritime.org](http://sanduskymaritime.org)

S.S. Willis B. Boyer  
 International Park of Greater Toledo, Inc.  
 PO Box 50406  
 Toledo, OH 43605  
 Tel: 419-936-3070  
 Fax: 419-936-3068  
 Web: [internationalpark.org/boyerhistory.html](http://internationalpark.org/boyerhistory.html)

Steamship William G. Mather Museum  
 1001 East 9th Street Pier  
 Cleveland, OH 44114-1003  
 Tel: 216-574-6262  
[wgmathernhlink.net/](http://wgmathernhlink.net/)

# Port of Toledo



## Toledo-Maumee River Port Identification Key

- |   |  |
|---|--|
| 1. Toledo Edison Co., Bay Shore Station Wharf                             | 18. City of Toledo, International Park Lower Mooring Wharves |
| 2. CSX Toledo Lakefront Ore Docks, TORCO Slip No. 1                       | 19. City of Toledo, International Park Upper Mooring Wharves |
| 3. CSX Toledo Lakefront Ore Docks, Slip No. 2                             | 20. ADM/Countrymark, Inc., Toledo Elevator Wharf             |
| 4. CSX Toledo Lakefront Ore Docks, Slip No. 3                             | 21. The Andersons, Inc., Toledo Edwin Drive Elevator Dock    |
| 5. CSX Toledo Presque Isle Coal Docks, Slip No. 1                         | 22. Kuhlman Corp., Upper Dock                                |
| 6. CSX Toledo Presque Isle Coal Docks, Slip No. 2                         | 23. Kuhlman Corp., Yard No. 1 Dock                           |
| 7. CSX Toledo Presque Isle Coal Docks, Slip No. 3                         | 24. The Andersons, Inc., Toledo Kuhlman Drive Terminal Wharf |
| 8. Toledo-Lucas County Port Authority, Facility No. 1 Wharf               | 25. Harbor Light Cruise Lines Dock                           |
| 9. BP Oil Co., Toledo Refinery Marine Dock                                | 26. LaFarge Cement, Toledo Terminal Wharf                    |
| 10. Toledo Shiprepair Co., Lower Mooring Dock                             | 27. City of Toledo Salt Wharf                                |
| 11. Toledo Shiprepair Co., Shipyard Slip                                  | 28. Toledo Harbor Warehousing Corp. Wharf                    |
| 12. Southdown Cement Co., Toledo Terminal Dock                            | 29. ARMS/ Criscione Grain Co. Wharf                          |
| 13. Toledo Shiprepair Co., Shipyard Dock                                  | 30. Wohlleb-Socie Slip                                       |
| 14. Nabisco, Inc., Toledo Flour Mill Wharf                                | 31. H. Hansen Industries Slip                                |
| 15. Sunoco MidAmerican Marketing and Refining Co., Downstream Hocking Val | 32. Clark Refining and Marketing Co. Wharf                   |
| 16. Sunoco MidAmerican Marketing and Refining Co., Upstream Hocking Val   | 33. City of Toledo Mooring Basin                             |
| 17. Seneca Petroleum Co., Edison Acme Station Slip                        | 34. City of Toledo Naval Armory Wharf                        |
|   | 35. US Coast Guard, Toledo Station Wharf                     |

In 1955, the state of Ohio enacted the Port Authority Act in order to take advantage of the newly created St. Lawrence Seaway system which allowed access to the Great Lakes from the Atlantic Ocean. Within days of its passage, civic leaders in Toledo created the Toledo-Lucas County Port Authority. Founded on July 18, 1955, it was the first port authority in Ohio.

With exceptional transportation assets at its disposal, Toledo has been able to market itself as a major transportation hub with the capability of accessing within one ‘transportation day’ (500 miles) more than 50 percent of the populations of the United States and Canada.

The Toledo area serves as the second largest seaport on the Great Lakes and one of the world’s busiest air freight hubs. Three major interstate highways (interstates 75, 80 and 90) pass through the city, providing short travel times to other major markets such as Chicago, Cincinnati, Cleveland and Detroit. The Port Authority also boasts Ohio’s busiest rail passenger terminal and 5<sup>th</sup> largest rail center in the country.

In the 1980s, as Toledo and other “rustbelt” cities competed with the world for jobs, it became apparent that the city needed a central authority to act as a lead agent in economic development. Because of its successes in transportation related

development initiatives, community leaders pressed for the Port Authority to assume that role. As a result, in 1988 the Toledo-Lucas County Port Authority became the lead economic development agency for the region. In 1996, the Port Authority spun off its economic development division to a stand-alone organization called the Regional Growth Partnership (RGP). While maintaining independence, the RGP continues to coordinate its activities with the Port Authority’s Strategic Management Plan, Annual Business Plan and day-to-day operating objectives.

### Toledo-Lucas County Port Authority’s Mission:

*“To assure that the Toledo area’s water, air, rail, and surface transportation assets are developed and operated in a cohesive, coordinated and safe manner in order to provide maximum efficiencies and benefits to shippers, receivers, and passengers; to assure optimum business growth, technology development, investment, job retention and improvement in quality of life.”*

The Port of Toledo is one of the most diverse and productive ports on the Great Lakes/St. Lawrence Seaway system and is a designated Foreign Trade Zone (FTZ). With a mile-long docking facility, the Port is serviced by two of the largest cranes on any port in the country, the “Big Lucas” and “Little Lucas.”

The seaport complex includes specialized docking areas for coal and ore as well as docking berths for tug boats. Heavy-lift gantry cranes serve the entire wharf. Additionally, the Port’s strategic combination of lift capacity, location, warehouse and open storage capacity is designed to more effectively meet international shipping needs.

### General Cargo

In 2005, cargo traffic at the Port of Toledo increased almost 15 percent, highlighted by significant growth in general cargo and iron ore. Local docks handled 164,588 tons of general cargo, a 34.3 percent increase from 2004. A 150-acre overseas cargo center is located along nearly 1 mile of straight-line wharf at the mouth of the Maumee River. The cargo center includes companies such as Toledo World Industries, Co. – as the overseas cargo operators and their link; Kuhlman Corporation – aggregate handling; Toledo Shiprepair Yard; Cemex and Lafarge Cement; Westway Terminal

# Port of Toledo



Northeast Maumee River Ports  
Map 56 GIS data citation in Appendices

Company – liquid storage; MidWest Terminals – stone unloading and 19 cargo handling terminals at the Port of Toledo including two shipyards.

### Grain

Corn, soybeans and wheat are the major grains shipped from The Andersons, ADM/Countrymark Cooperative Inc. and Cargill Incorporated (operated by The Andersons) terminals. Toledo’s river-front grain terminals have access to ship, rail and road. The port’s three terminals have a 22 million bushel storage capacity. This includes:

- The Andersons - 7 million bushels

- Archer Daniels Midland Company (ADM) - 9 million bushels
- Andersons-E - 6 million bushels

### Bulk

Toledo is one of the largest capacity coal and iron ports in the world. Taconite is shipped to Toledo’s TORCO dock from the St. Lawrence River by self-unloading vessels. The dock can accommodate 1,000-foot long lake vessels. Coal shipping is conducted through the CSX Transportation Docks.

For a five year period (2000-2004), Toledo shipped an average 4.15 million net tons of coal per year, according to the

Lake Carriers’ Association. In 2005, iron ore shipments totaled 3.94 million tons, a 34.5 percent increase from 2004’s 2.93 million tons.

### Airport Operations

In the 1970s, air transportation emerged as an increasingly important factor in the economy.

In 1973, the city of Toledo requested that the Port Authority assume the day-to-day operation and management of its two airports, Toledo Express Airport and Metcalf Field. Since that time, the Port Authority has simultaneously expanded both facilities and added major cargo

operations at Toledo Express Airport.

The Toledo Express Airport, located at Exit 52 of the Ohio Turnpike, serves more than half a million passengers annually with a growing number of airline service providers traveling to destinations including Chicago (Midway and O’Hare), Cincinnati, Cleveland, Detroit, Las Vegas, Orlando and Pittsburgh. Toledo Express also ranks among the busiest air-cargo hubs in the country. Utilizing a sprawling 279,000-square-foot facility, BAX Global Corporation provides time-sensitive air freight delivery service for the region’s top businesses.

### Surface Transportation

The Port Authority continued the expansion of its role by adding surface transportation to the span of its responsibilities and quickly moved to lead efforts to redevelop the city’s passenger rail terminal. The Port Authority acquired Central Union Terminal from Conrail in 1994. One of the last union stations constructed in the United States, the station had fallen into despair. The Port Authority undertook a \$3.1 million renovation and the Central Union Plaza was rededicated in 1996. In 2001, its name was changed to the Dr. Martin Luther King, Jr. Plaza.

Up to 100,000 passengers pass through Dr. Martin Luther King, Jr. Plaza each year, making it Ohio’s busiest passenger rail hub. Toledo is served by four Amtrak trains daily to Chicago and several destinations to the east including Boston, Cleveland, New York, Philadelphia, Pittsburgh and Washington, D.C. The facility also serves as a bus terminal and office complex.

Four major freight railroads transport goods through the region, including petroleum products, automotive parts, completed automobiles, bulk and break-

bulk cargo and food products. Toledo ranks as one of the top five rail hubs in the United States.

### Highway Development

Since 1994, the Toledo-Lucas County Port Authority has become a recognized leader in surface transportation by serving as a major consultative body, financing mechanism and project sponsor for regional rail and highway development. The new \$220 million high-level bridge spanning the Maumee River – the Maumee River Crossing – is the most expensive bridge project in the history of Ohio and is scheduled for completion in 2006. This project, as well as other interstate highway improvements will create greater access to Toledo and the surrounding areas.

### Economic Development and Brownfield Redevelopment

Frequently, the Toledo-Lucas County Port Authority looks beyond transportation issues to address the economic needs of the community. Armed with its capabilities to issue bonds and innovative finance programs, the Port Authority has been instrumental in financing a number of projects vital to the continued economic health of the region. Within the last several years the Port Authority has structured financing support programs for 208 projects for nearly \$834 million, creating and retaining more than 10,000 jobs.

Out of necessity, the Toledo-Lucas County Port Authority has acted to address environmental concerns in the region. The Port Authority created the Property Management & Development division in response to the growing problem of polluted, former industrial sites throughout the region. In addition to the crucial work of brownfield rede-



Toledo Harbor, Lucas County – Photo by Melinda Huntley

velopment, this division also oversees the acquisition, sale and lease of Port Authority property. By restoring previously unusable properties to the tax base, the Port Authority has assumed an expanded role in economic development and has become a leader in developing innovative solutions to the challenges of urban property redevelopment.

The maps showcase Toledo’s seaports located at the conflux of Maumee Bay and the Maumee River.

**Latitude:** + 41.7014 NORTH  
**Longitude:** - 83.4531 WEST

### For more information/ Sources:

Toledo-Lucas County Port Authority  
One Maritime Plaza, 7<sup>th</sup> Floor  
Toledo OH 43604-1866  
Web: [toldeoportauthority.org](http://toldeoportauthority.org)

The Toledo Blade  
Article - “Port of Toledo’s cargo increases almost 15%”  
January 24, 2006

# Port of Marblehead



Marblehead Ports  
Map 57 GIS data citation in Appendices

Putting east parallel to the Ottawa-Erie County southern border and into Lake Erie, about 40 miles east of Toledo and 70 miles west of Cleveland, is the Marblehead Peninsula. The peninsula, completely within Ottawa County, contains Danbury Township, Lakeside on Lake Erie and the village of Marblehead.

The rocky Marblehead coast, with Lake Erie on the north and Sandusky Bay to the south, offers opportunities for a variety of water-related activities including dockage, charter boat services and public and private boat launching facilities. The village of Marblehead

is home to the busiest United States Coast Guard station on the Great Lakes, which began as the Marblehead Lifeboat Station on June 20, 1874. The official opening of the station was in September 1876 with Lucien M. Clemons as the first keeper. From the lakeshore, freighters and barges load quarry stone at the dock next to the Coast Guard station via overhead conveyors.

Marblehead is home to the renowned Marblehead Lighthouse, one of Ohio's most picturesque Lake Erie landmarks. Built in 1822, it is the oldest continuously operating lighthouse on the Great Lakes. The Ohio Department of Natural

Resources has maintained the grounds surrounding the lighthouse and keeper's house since 1972, and in 1998 it became a state park. Marblehead Lighthouse State Park offers lighthouse tours, a museum in the keeper's house, picnic tables and a spectacular view of Lake Erie. The U.S. Coast Guard continues to maintain the navigation beacon.

Carved into the same broad band of limestone that created the glacial grooves on Kelleys Island, the middle of the Marblehead Peninsula has been quarried for more than 200 years, most recently by Lafarge North America. It is one of the largest limestone quarries in

Ohio producing approximately 4 million tons of crushed limestone per year. It is one of only eight stone-loading ports on the Great Lakes.

The limestone from Marblehead has been used to build the locks at Sault Ste. Marie, the Henry Ford estate near Dearborn Michigan, the Spectacle Reef Light near the Straits of Mackinac and even the Empire State Building. Limestone is also used by America's steel industry as a purifying agent and is used as an aggregate for highway development.

The quarry is not open for daily visitors; however, in addition to taking a special tour, one can view the conveyor system used to load freighters from the village. Also, ODNR's Lakeside Daisy State Nature Preserve encompasses 19 acres of the old limestone quarries. This preserve was established in 1988 to protect the only natural United States population of the Lakeside daisy, a federally threatened plant species occurring naturally only at two other sites, both in Ontario, Canada. Also a state endangered species, this is one of Ohio's most spectacular wildflowers whose bright yellow flowers adorn the otherwise bleak, sun-baked landscape of the Marblehead quarry in mid-May.

Marblehead also offers access to Kelleys Island via the Kelleys Island Ferry Boat Lines, Inc. which operates auto-passenger ferryboats from the village of Marblehead to Kelleys Island. This service operates year-round regular departures, weather pending.

**Latitude:** + 41.539 NORTH  
**Longitude:** - 82.731 WEST

#### For more information:

Kelleys Island Ferry Boat Lines, Inc.  
Marblehead Ferry Dock  
510 West Main Street

Marblehead OH 43440  
Tel: 419-798-9763  
Fax: 419-798-8009  
E-mail: [kelleys@cros.net](mailto:kelleys@cros.net)  
Web: [kelleysislandferry.com](http://kelleysislandferry.com)

Lafarge North America  
Marblehead Quarry  
831 S. Quarry Road  
Marblehead, Ohio 43440  
Tel: 419-798-4486  
Fax: 419-798-5795  
Web: [lafargecorp.com](http://lafargecorp.com)

ODNR Division of Parks and Recreation  
Marblehead Lighthouse State Park  
110 Lighthouse Drive  
Marblehead OH 43440  
Tel: (419) 734-4424  
Web: [ohiodnr.com/parks/marblehead.htm](http://ohiodnr.com/parks/marblehead.htm)

United States Coast Guard Station  
Marblehead  
606 Prairie Street  
Marblehead OH 43440  
Tel: 419-798-4444  
Web: [uscg.mil](http://uscg.mil)



Marblehead port, Ottawa County



Lafarge Quarries in Marblehead, Ottawa County

## What is a Port Authority?

A Port Authority is a government entity established by law that has specified powers and authority over water ports, cargo ports and airports. In Ohio, there are 30 port authorities established under Chapter 4582 of the Ohio Revised Code. Of those 30, 10 are located along the Lake Erie coast.

- Ashtabula City Port Authority
- Ashtabula County Port Authority

- Cleveland-Cuyahoga County Port Authority
- Conneaut Port Authority
- Fairport Harbor Port Authority
- Huron-Joint Port Authority
- Lorain Port Authority
- Put-In-Bay Township Port Authority
- Toledo-Lucas County Port Authority
- Vermilion City Port Authority

# Port of Kelleys Island



Kelleys Island Ports  
Map 58 GIS data citation in Appendices

Throughout Kelleys Island's history, goods such as wine, grapes, limestone and fish have been shipped off the island which lies in Lake Erie's Western Basin approximately 12 miles from Sandusky and four miles north of the Marblehead Peninsula.

In the 1830s, three industries flourished on Kelleys Island – vineyards, limestone quarries and the cutting of red cedar to feed steamship furnaces. Today, quarrying and some grape production continue on Lake Erie's largest U.S. island; however, the major industry is tourism.

Quarrying on the island began as hard, dangerous work. Early operators used drills, chisels, hammers, augers and black powder to "sledge" – hammer and blast their way through the stone. Crews loaded wagons and hauled the stone to one of several docks where it was sold by the cord and loaded onto vessels. The building stone, known as dimension stone, was shipped to Cleveland, Detroit and Buffalo where it was used to construct churches, homes, buildings, breakwaters, piers and, in 1875, the first American lock at Saulte Ste. Marie.

Quarrying came into its own on the island when the Kelleys Island Lime & Transport Company (KIL&T) acquired many of the small quarries, connected them with a rail network, and mechanized operations. To meet the demand for flux stone used in manufacturing steel, KIL&T hired local residents and then recruited laborers from Ireland, Italy and eastern Europe. By the turn of the century, more than 500 men worked at the company's 16 limekilns located at the North Bay quarry, the cooper shop and on the wharf.

In 1910, KIL&T constructed the West Bay stone loading dock. Shay engines built at the Lima Locomotive Works pulled carloads of stone over an elevated track to chutes that funneled stone into the holds of waiting ships. Within two years, ships were carrying more than 500,000 tons of stone each year. The operations of KIL&T grew to include facilities in five states. The company became the largest limestone producer in the world.

Changes in the building stone trade and the Great Depression forced KIL&T to eventually close its quarries. Its last loads were shipped just prior to the outbreak of World War II. Since then, the quarry on Kelleys Island has reopened and operated under the name of Kellstone, Inc. The Kellstone Quarry produced limestone that was barged to the Cleveland River Dock location and sold as high-quality construction aggregate. In 2004, La Farge of North America purchased the 200-acre Kellstone quarry, which can produce more than a million tons of limestone each year. Most is still shipped by barge to the Cleveland docks where it is sold as aggregate.

Most visitors access the island by the Kelleys Island Ferry Boat Line (see Marblehead). However, others arrive by boats or airplanes. At least five island marinas provide dockage. Kelleys Island State Park, located at the North-West end of the island, also offers a free double boat launching ramp and trailer parking. Griffing Flying Service offers year-round flights to and from Sandusky. The airport's paved and lighted runways are open to private aircraft too.

**Latitude:** + 41.6028

**Longitude:** -82.706

#### For more information/ Sources:

Kelleys Island Chamber of Commerce  
P.O. Box 783-F  
Kelleys Island OH 43438  
Tel: 419-746-2360  
Web: [kelleysislandchamber.com](http://kelleysislandchamber.com)

Kelleys Island OH  
Web: [kelleysisland.com](http://kelleysisland.com)

Village of Kelleys Island  
121 Addison  
Kelleys Island OH 43438  
Tel: 419-746-2535  
Fax: 419-746-9595  
Web: [kelleysisland.org](http://kelleysisland.org)

*Mysterious Islands: Forgotten Tales of the Great Lakes* by Andrea Gutsche and Cindy Bisailon, 4th Edition. Copyright 2002.

Rutherford B. Hayes Presidential Center  
Web: [rbhayes.org](http://rbhayes.org)



## Island Routes

State Routes 357 and 575 may not be the shortest state routes in Ohio, but they are separated from the rest, literally. SR 357 and SR 575 are the only two certified state routes that do not intersect with another state route. Both are isolated from Ohio's dense network of state and federal highways because they are located on two of Ohio's islands.

State Route 357 is a 3-mile long segment of highway on South Bass Island that travels from the ODNR Division of Wildlife's Aquatic Visitor Center, eastward through downtown Put-in-Bay and past Perry's International Victory and Peace Memorial to the eastern point of the island. The two-lane highway, which is frequently congested with golf carts during the height of the tourist season, was certified as a state route in 1936. At one time, a one-mile long ferry route from South Bass Island to Catawba Island also carried the SR 357 designation; however it was decertified in 1970.

State Route 575 is also a 3-mile long segment of highway. It is on Kelleys Island. SR 575 travels along West Lake Shore Drive from near downtown Kelleys Island northward to Titus Road, and then westward along Titus Road to Kelleys Island State Park. The route was certified a state highway in 1940.

#### Sources:

"The Unofficial Ohio State Highways Web Site" [pages.prodigy.net/john.simpson/highways/ohhwys.html](http://pages.prodigy.net/john.simpson/highways/ohhwys.html)

# Port of Sandusky



*Sandusky Bay Ports*  
Map 59 GIS data citation in Appendices

From the earliest days of lake navigation, Sandusky Harbor has been considered one of the best on the chain of lakes. Practically landlocked, it offers a safe haven in time of storm and gives anchorage room for more vessels than any harbor on the inland seas.

Sandusky was the center of the freshwater fish supply in the United States. For years fishing was regarded as the city's main industry exporting more than 10-million pounds annually.

In the days before electric refrigeration, Sandusky was a leader in the production of natural ice. After Sandusky

Bay was frozen each winter, hundreds of people were employed cutting ice into blocks and storing it in icehouses.

Since the 1893 opening of the coal docks on Sandusky's west end, millions of tons of black diamonds have been shipped via lake freighter, making Sandusky one of the leading Great Lakes ports in this commodity. According to the Lake Carriers' Association, coal shipment over a five-year period (2000-2004) averaged 4.1-million net tons per year.

The Sandusky coal dock is a Norfolk Southern (NS) Corporation-owned and

served facility operated by Sandusky Dock Corporation. It operates one Heyl & Patterson high-lift dumper with an average loading capacity of 2,625 tons per hour, according to the NS Corporation website. The facility accommodates a maximum vessel length of 1,000 feet and overall loading capacity of 50,000 net tons. Storage capacity of 875,000 tons is available with reclaimed coal and railcars loaded to vessel simultaneously. The facility has an annual throughput capacity of 7-million tons. Today, on average more than 4.8-million tons of coal are exported

each year during the normal loading season of April 1 to December 15, when the port is operational 24 hours a day, seven days a week.

More than half of all coal cargo shipped on the Great Lakes begins a journey in Toledo, Sandusky, Ashtabula or Conneaut. Both metallurgical coal for the production of steel and steam coal for the generation of power are shipped.

Sandusky also has a road salt material storage dock and marine operations facility operated by the Geo Gradel Co. In December 2005, the city of Sandusky was awarded a \$2.74 million grant through the Clean Ohio Revitalization Fund which will go toward the acquisition, demolition and clean up of the approximately 30-acre property. Plans for the site include a new marina with 200 boat slips, 12,000 sq. feet of commercial space, 300 condos and public greenspace. The project is part of the city's Paper District revitalization which is converting former industrial and now vacant waterfront properties into condominiums, retail and public space. It is hoped that the salt dock will be relocated to a new location within the city.

Sandusky has also been a gateway to the Lake Erie islands recreational playground. For more than 150 years, excursion boats have made the daily trek to the islands. Today, during the summer months, various ferries transport passengers to Kelleys Island, South Bass Island and Canada's Pelee Island. Historically, a ferry was also used to transport visitors from the Jackson Street Pier to Cedar Point Amusement Park, but in recent years the ferry has stopped running.

Erie County also boasts more than 6,000 registered boats, most located on Sandusky Bay.

**Latitude:** +41.459 North  
**Longitude:** - 82.732 West

## For more information/ sources:

Sandusky Area Maritime Association  
Sandusky Maritime Museum  
125 Meigs Street  
Sandusky OH 44870  
Tel: 419-624-0274  
Web: sanduskymaritime.org/

Norfolk Southern Corporation  
110 Franklin Road  
Roanoke VA 24042-0026  
Tel: 540-985-6795  
Fax: 540-985-6398  
Web: nscoorp.com/nscoorp



*Sandusky coal docks jutting into the Sandusky Bay (Sandusky Dock Corp., No. 3)*



*Freight vessel, Sandusky*

## Public Transportation Transit Systems in Coastal Counties

- Ashtabula County Transportation System
- Bowling Green Transit
- Greater Cleveland RTA
- Laketrans (Lake County)
- Lorain County Transit
- Ottawa County Transportation Agency (OCTA)
- Sandusky County Transit System (SCAT)
- Sandusky Transit System
- TARTA (Toledo)



*Sandusky Maritime Museum*

# Port of Huron



Collectively, Ohio's Lake Erie ports, including Ashtabula, Cleveland, Conneaut, Huron and Toledo, receive in excess of 18 million tons of iron ore from ports primarily along Lake Superior. From these Ohio ports, subsequent transport destinations for the iron ore include Pennsylvania, West Virginia and Kentucky.

Huron wharfs are located at the mouth of the river by the same name. The port itself is located 50-miles west of Cleveland and about 10-miles east of the mouth of Sandusky Bay. Huron has been a popular trade destination since the mid-1700s, when French fur traders exchanged goods with American Indians.

In the early 1800s, modern harbor construction began. Today slips are capable of accommodating large lake freighters unloading iron ore and limestone. Until August 12, 2006, the port was also an international export center for grain; however, the company operating the grain elevator ceased operations and sold the property to the Ohio Department of Natural Resources. ODNR and the city of Huron are working on a joint venture to redevelop this 19.8-acre parcel into recreational boating access and residential/commercial uses.

The Huron Harbor breakwater is frequently used as a fishing pier, and the dredge spoil adjacent to the west is

being transformed by the Army Corps of Engineers into a 64-acre island that is planned to be a town park. Huron also has a transient dockage boat basin and seasonal dockage is available there and at the many marinas along the Huron River.

**Latitude:** + 41.3980 NORTH  
**Longitude:** - 82.5494 WEST

#### For more information:

Huron-Joint Port Authority  
P.O. Box 468 City Hall  
Huron OH 44839  
Tel: 419-433-5000  
Fax: 419-433-5120



Large freight vessel at Huron Harbor, Erie County



Lime plant in downtown Huron



Dredging vessel in Huron Harbor

## U.S. Coast Guard 9th District

Headquartered in Cleveland, the 9th Coast Guard District encompasses the shores of the Great Lakes states of Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania and New York.

The 9th District employs more than 2,200 active-duty members, 190 civilians, 1,100 reservists and 4,200 auxiliaries serving the needs of the public. The district facilities include 92 units in all, 48 of which are stations with 188 small boats. There are also two air stations, one air facility, two LORAN stations and 10 cutters which are boats more than 65-feet long. The units are tasked with traditional Coast Guard missions such as boating safety, military readiness, search and rescue, aids to navigation, icebreaking, law enforcement, environmental protection and port security. These units are responsible for more than 1,500 miles of international border and 6,700 miles of U.S. coast spanning eight states and all five Great Lakes from Alexandria Bay, New York, to Duluth, Minnesota.

To facilitate commerce on the Great Lakes during the winter months, the 9th District employs five 140-foot icebreaking tugs, the 290-foot icebreaker Mackinaw, and three 180-foot icebreaking buoy tenders. During an average winter season, the cutters, working closely with the Canadian Coast Guard, clear the way for approximately \$62 million worth of commercial cargo.

The district maintains more than 3,300 buoys, navigational lights and fixed aids throughout the Great Lakes. There are also eight marine safety offices, nine captains of the port and three marine safety detachments. Additionally, the district has a combat-trained port security unit which can be deployed to any location in the world. Such was the case during the Persian Gulf War and the Haitian operation "Uphold Democracy."

In Ohio, Coast Guard stations are located in Toledo, Marblehead, Lorain, Cleveland, Fairport Harbor and Ashtabula.

#### For more information:

United States Coast Guard District 9  
Cleveland, Ohio  
Web: [uscg.mil/d9/iscgd9/html](http://uscg.mil/d9/iscgd9/html)

# Port of Lorain



Black River Ports  
Map 61 GIS data citation in Appendices

The Port of Lorain is located at the conflux of the Black River and Lake Erie approximately 30 miles west of Cleveland. The port is primarily a bulk cargo port with commodities consisting of iron ore, limestone, gypsum, potash, sand, gravel and salt.

Historically, the port's key commodity was iron ore. However iron ore tonnage has decreased due to the relocation of the steel transshipment facility to Cleveland in 2003 and 2004.

By following a well-conceived waterfront development plan, the Lorain

### Lorain Port Authority's Mission:

*"To promote waterborne commerce, to provide economic development opportunities within the City of Lorain, and to enhance public access to our waterways."*

Port Authority effectively replaced a once blighted and inaccessible waterfront with public improvements such as Lakeside Landing, the renovation of Riverside Park, Black River Wharf Launch Ramp, and most recently, Black River Landing. Additionally, the Lorain

Port Authority has assisted businesses such as Advanced Automotive Systems (Camaco) and Brush Wellman in relocating to Lorain.

The Lorain Port Authority was Ohio's second such entity created, on May 4, 1964.

### RECENT PROJECTS

#### Black River Landing

In 1998, the Lorain Port Authority was awarded \$6.95 million to develop the Black River Landing through the Federal TEA 21 and State Trac Programs. Located just south of the Charles Berry Bridge in the heart of the city, the Black River Landing project links various modes of transportation to the site, including highway, rail, waterborne and pedestrian. For the first time in the city's history, the project connected Lorain's downtown directly to the waterfront, dramatically changing the character and landscape of the riverfront.

The site includes the 5,000-square-foot Black River Transportation Center, dockage area for excursion vessels, permanent pavilions for festival use, an international promenade, walkways, patios and parking. In its first year, Black River Landing attracted more than 300,000 people to the waterfront for various concerts, festivals and special events including the Lorain Port Authority's annual Port Fest, the 4th of July Fireworks Celebration, and other special events. This site and these events have brought new life and energy into the community and downtown area.

Lorain County contributed \$1 million for the reconstruction of Black River Lane to improve access to the Transportation Center from downtown Lorain. The Black River Transportation Center also offers a strong potential for

commuter rail to other Northeast Ohio regions.

The second phase of development on Black River Landing primarily focuses on the southern five to seven acres of the site. The proposed project will be a mixed-use development consisting of restaurants, housing, office and retail/commercial uses. This project will complement the Spitzer Harbor Walk housing development on the east bank of the river.

#### Riparian Area

The Ohio Environmental Protection Agency required the Lorain Port Authority to construct fish habitat along the river of the Black River Landing project. This unique, shallow-water fish shelf serves as a riparian wetland and has attracted an unprecedented number of fish to the area, resulting in a Fish Species and Diversity rating approaching the 'Exceptional' level.

#### Lorain East Basin Dredging Project

The Lorain Port Authority was awarded \$40,234 from the Ohio Department of Natural Resources to complete dredging in the Harbor East Basin Area. This \$53,645 project involves the removal of approximately 3,100 cubic yards of material to improve access for the boating public.

#### Great Lakes Kayaking

Since the 2004 boating season, the Lorain Port Authority has made kayak and canoe rentals available to the public. People can access the lake or river from the rental location or from the Black River Boat Launch. This service enhances recreational opportunities along the lakeshore by providing residents and visitors alike, a stunning

# Port of Lorain

view of the wildlife and nature that can be found along the shores of the river's scenic waterfront.

## Boat Launch Ramps

The Black River Boat Launch, located at 14th Street, provides boaters and anglers with six ramps for quick launching and recovery. The award-winning facility includes a bait and snack shop that is open daily during the fishing season. Free parking is available for 170 cars with trailers and 25 passenger vehicles. Since its creation, the launch ramp has hosted several local, regional and state fishing tournaments. Improvement of the water quality has dramatically contributed to recent sport-fishing success in Lake Erie and the upper reaches of the Black River.

The Lorain Port Authority also offers launching from the East Side Launch Ramp at Alabama and Lakeside avenues, just west of Spitzer marina, next to Coast Guard Station Lorain.

## Marine Patrol Program

The Lorain Port Authority secures grant funding annually from ODNR for operations of the Marine Patrol Program for the summer boating season. The program is a partnership between the City of Lorain Police Department and the Lorain Port Authority. The Marine Patrol program consists of five marine officers that are current or retired police officers from the Lorain Police Department who promote boating safety and education on Lorain's waterfront. It is the only Marine Patrol Program operating in Ohio that is not administered by a police or sheriff department.

## FUTURE PROJECTS

The Lorain Port Authority, Lorain County Metro Parks and the City of Lorain have combined efforts to develop an overall master plan for the 58-acre confined disposal facility located on Lorain's lakefront. A task force consisting of members of the community, business leaders and elected officials was created to oversee the planning process.

The primary goals of the task force are to develop a comprehensive plan that provides for year-round usage and facilities; coordinate development opportunities with the U.S. Army Corps of Engineers' dredging requirements; and work toward the ultimate closure of the site as a disposal area.

With 58 acres, there are many options for usage on the site – all of which will be reviewed to determine economic feasibility and potential impact on the City of Lorain and Lorain County. Any projects that are ultimately developed on the site will be of countywide significance.

The Lorain Port Authority is negotiating with the Port of Lorain Foundation to sublease the Port's Riverside Marina building and use it as a lighthouse museum, ticketing office, gift shop and snack bar. The Lorain Lighthouse was purchased by the Port of Lorain Foundation in 1990 and has undergone 14 years of renovation to transform it back to the "Jewel of the Port" that it once was.

**Latitude:** + 41.4713 NORTH

**Longitude:** - 82.1817 WEST

### For more information:

Lorain Port Authority

611 Broadway

Lorain OH 44052

Tel: 440-204-2273

Fax: 440-244-1872

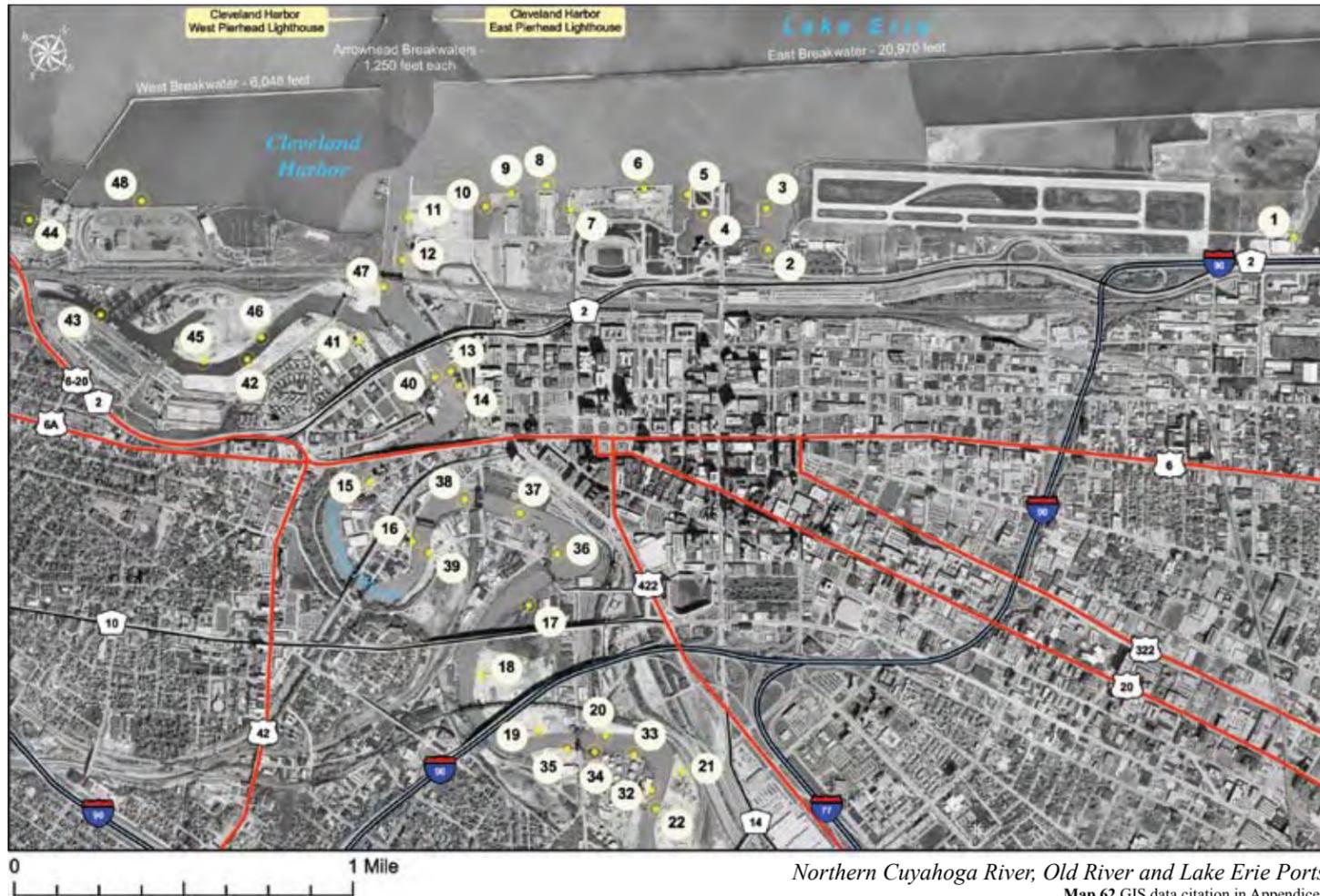
E-mail: [rnovak@lorainportauthority.com](mailto:rnovak@lorainportauthority.com)

Web: [lorainportauthority.com](http://lorainportauthority.com)



*Lorain Harbor*

# Port of Cleveland



Northern Cuyahoga River, Old River and Lake Erie Ports  
Map 62 GIS data citation in Appendices

## Cleveland-Cuyahoga River Port Identification Key

- |   |  |
|---|--|
| 1. City of Cleveland, Harbor Police Mooring Dock                                  | 23. LTV Steel Corp., Cuyahoga Lower Dock, East Side        |
| 2. US Coast Guard, Cleveland Harbor Station Dock                                  | 24. LTV Steel Corp Cuyahoga fuel oil dock                  |
| 3. US Army Corps of Engineers, Cleveland Project Office Pier                      | 25. LTV Steel Corp., Cuyahoga Upper east Side Dock         |
| 4. Cleveland-Cuyahoga County port authority, East 9th St Pier                     | 26. LTV Steel Corp., Cuyahoga Lower West Side, Middle Dock |
| 5. Cleveland-Cuyahoga County port authority, Stadium Wharf, Berth 32              | 27. LTV Steel Corp., Cuyahoga Lower West Side Dock         |
| 6. Cleveland-Cuyahoga County port authority, Stadium Wharf, Berths 28             | 28. MARSULEX, Inc. Cleveland Wharf                         |
| 7. Cleveland-Cuyahoga County port authority, Stadium Wharf, Berth 28              | 29. Lafarge corps construction materials group             |
| 8. Cleveland-Cuyahoga County port authority, Pier #26                             | 30. Blue Circle Cement Co                                  |
| 9. Cleveland-Cuyahoga County port authority, Pier #24                             | 31. Bituminous Products Co., Cleveland Terminal Wharf      |
| 10. Cleveland-Cuyahoga County port authority, berth 22 east                       | 32. Inland Waters of Ohio, Inc., Cleveland Mooring         |
| 11. Cleveland-Cuyahoga County Port Authority, Dock #20                            | 33. Fleet Supplies, Inc                                    |
| 12. Essroc Cement Dock  | 34. Equilon Enterprises L.L.C., Cleveland Dock             |
| 13. Samsle Supply Co., Old River Road Dock  | 35. The Osterland Co., Cleveland 'SOUTH' Dock              |
| 14. Cleveland Marine Towing Co Wharf  | 36. City of Cleveland, Eagle Ave. Fireboat Wharf           |
| 15. Cereal Food Processors, Cleveland Dock  | 37. Forest City Enterprises                                |
| 16. Southdown Cement Co., Cleveland Dock  | 38. Scranton-Averell, Inc. Dock                            |
| 17. Mid-Continent Coal & Coke Co., Cleveland Dock                                 | 39. United Ready Mix Dock                                  |
| 18. River Dock, Inc., Dock  | 40. 'Nautica Queen' Mooring Dock                           |
| 19. LaFarge Corp. Construction materials group, West 3 <sup>rd</sup> St Cleveland | 41. LaFarge Cement Corp., Cleveland Terminal Wharf         |
| 20. Ontario Stone Corp., Cuyahoga River Dock #2                                   | 42. Ontario Stone Corp., Old River Dock #4                 |
| 21. Marathon Ashland Petroleum LLC., Cleveland Asphalt Terminal Barg              | 43. Great Lakes Towing Co., Shipyard Wharf                 |
| 22. Osborne Concrete and Stone Co., Cuyahoga Stone Dock                           | 44. Cargill Salt Division, Cleveland Mine Wharf            |
|   | 45. Sand Products Corp., Old River Dock #1                 |
|   | 46. Ontario Stone Corp., Old River Dock #3                 |
|   | 47. Ontario Stone Corp., Old River Dock #1                 |
|   | 48. Oglebay Norton Terminals, Inc., Lakefront Wharf        |

The Port of Cleveland, the third largest port on the Great Lakes, is located on the south shore of Lake Erie at the mouth of the Cuyahoga River. Its harbor has two distinct parts: an outer harbor formed by 5.5 miles of breakwater and an inner harbor consisting of the Cuyahoga River and its old channel, known as the "old river bed." The Cleveland-Cuyahoga County Port Authority was the third port authority created in Ohio (in 1968).

Eight international cargo docks occupy 110 acres along Lake Erie on the east side of the Cuyahoga River, and the Cleveland Bulk Terminal transshipment

facility sits on 44 acres just west of the river.

Shipping activities at the Port of Cleveland began in 1825. During its first year of operation, the port recorded \$38,000 in exports and imports of \$196,000. Now the Port of Cleveland averages nearly \$1 billion annually in imports and exports.

As one of the busiest Great Lakes cargo ports, the Cleveland-Cuyahoga County Port Authority handles 12 million to 16 million metric tons of cargo, including more than 700,000 tons of international cargo. Primary imports include steel, heavy machinery and

liquid/dry bulk, while machinery, salt and steel comprise the major outbound cargoes. Cleveland is also one of only two U.S. salt-shipping ports on the Great Lakes, the other being Fairport Harbor.

Material handled by the Cleveland Bulk Terminal facility averages 2.3 million tons per year and consists of iron ore pellets used to support the local steel industry. Other terminals handle limestone and salt cargoes, averaging 12 million tons annually.

The Port of Cleveland offers a full complement of economical, efficient services for its terminal operators and tenants and trucking, towing and rail pro-

viders. Lakefront docks are maintained at a full seaway depth of 27 feet. The docks have connections to State Route 2, interstates 71, 77, 90 and 80 (Ohio Turnpike), and the Norfolk Southern and CSX railroads. In 2003, the port opened a new underpass to carry truck traffic in and out of the port and away from pedestrians.

Four available warehouses provide 353,300 square feet of covered storage,

along with 1 million square feet of open storage. All areas are perimeter-fenced, lighted and guarded 24 hours a day.

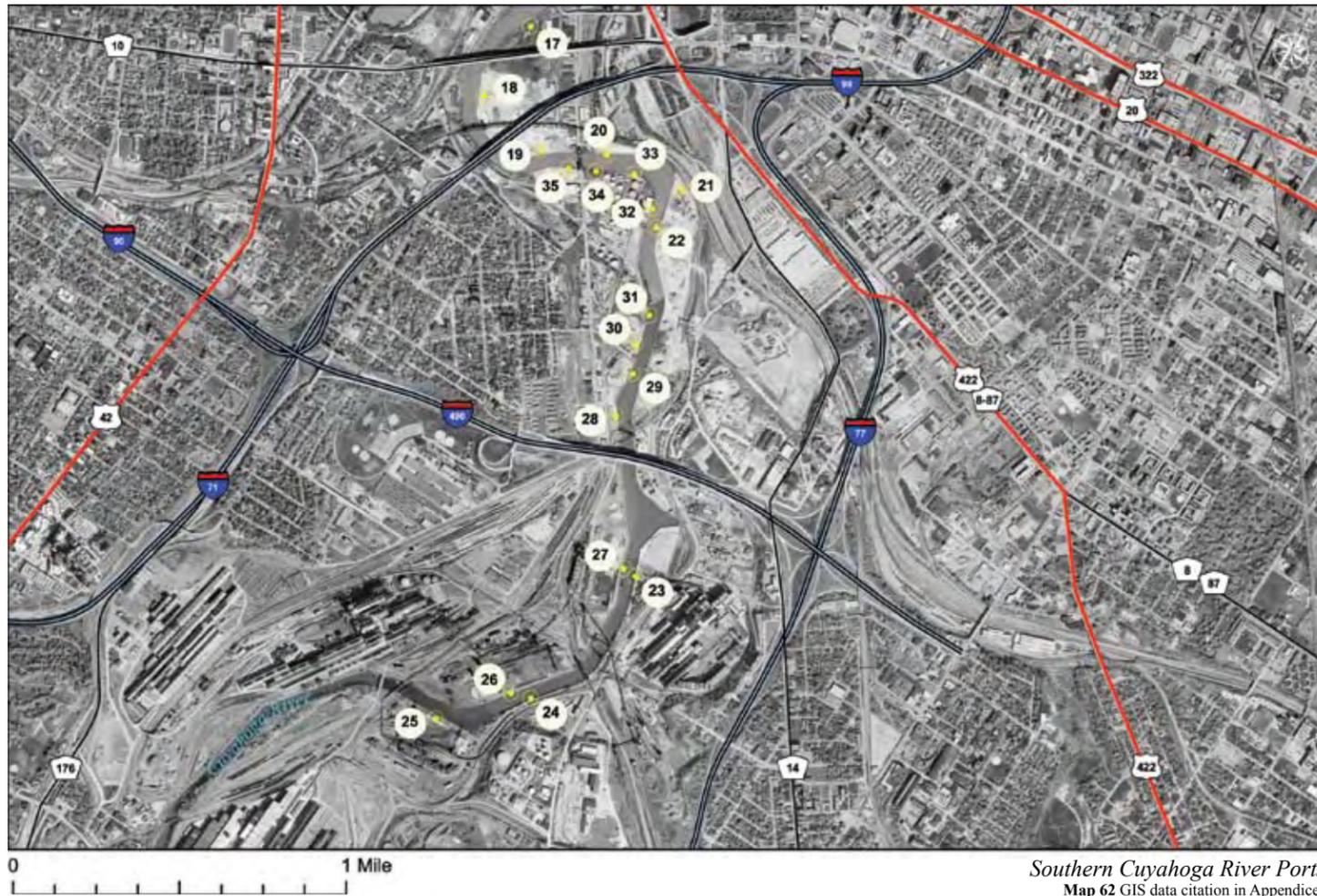
### Cleveland Bulk Terminal

Since the Cuyahoga River is narrow, shallow and has several sharp turns that make it impossible for larger boats to navigate, vessels are unloaded on the lakefront at the Cleveland Bulk

Terminal. Cargoes are then reloaded by the ore loader onto smaller boats that can transit the Cuyahoga River to the local steel plant.

The ore loader can transfer material at a rate of 4,000 tons per hour. The loading system increases production, reduces costs, maintains pellet quality and reduces emissions.

# Port of Cleveland



**Cleveland-Cuyahoga County Port Authority's Mission:**

*“To assist private industry in retaining and creating jobs by providing waterborne cargo transportation/services and by providing economic development facilitation through financing services and other development tools in partnership with local and state development agencies.”*

Three Cleveland companies benefit from the ore loader:

- Cleveland-Cliffs – supplies the iron ore pellets
- International Steel Group - uses the pellets at its mills
- Oglebay Norton Co. – Cleveland Bulk Terminal and ship operator

**Equipment**

The Port of Cleveland has more heavy lift equipment and cranes than any other Great Lakes port. Equipment and capacity include:

- *Buckeye Booster*, a stationary lift with a capacity of 15 tons

- Seven *Manitowoc* cranes that lift up to 200 tons
- 45 lift machines that hoist up to 35 tons
- 20 lift trucks handling up to 35 tons
- A 60-ton state-certified truck scale available to port customers

**Access**

Cleveland’s geographic location is an asset. Ample truck, rail and air connections allow shippers to economically transport their goods between Cleveland and other destinations. The city lies within close reach of the concentration of the nation’s consumers. Nearly half

of all U.S. households, businesses and manufacturing plants are less than an eight-hour drive from Cleveland.

Cleveland’s connection to the St. Lawrence Seaway provides a direct connection to the world, enhancing the region’s competitive advantage for shipping steel and other cargoes to and from Europe.

**Economic Impact**

Area manufacturers rely on the Port of Cleveland to help deliver their locally-made products to U.S. and foreign markets and to obtain low-cost delivery of raw materials. Cargo shipped directly through the Port of Cleveland save area businesses \$19 million in shipping costs annually.

Ninety percent of all cargo entering and leaving the Port of Cleveland is produced or consumed within a 75-mile radius, earning the port the title of “destination” port. As a destination port, the economic impact is felt closer to home.

Port activities help sustain the Northeast Ohio regional economy by connecting local industries to the world, and supporting 11,000 jobs that generate more than \$572 million in personal income taxes.

**Governance**

The Cleveland-Cuyahoga County Port Authority was established in 1968 to oversee the port’s maritime operations and to improve competitiveness. A nine-member board of directors sets the policies and procedures governing the port. Board appointments are shared by the city and county. Members serve a minimum four-year term.

**Latitude:** + 41.5023 NORTH  
**Longitude:** - 81.7113 WEST

**For more information:**

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Suite 2300  
1375 E. Ninth St.  
Cleveland OH 44114  
Tel: 216-241-8004, ext. 33  
Fax: 216-241-8016  
Web: portofcleveland.com



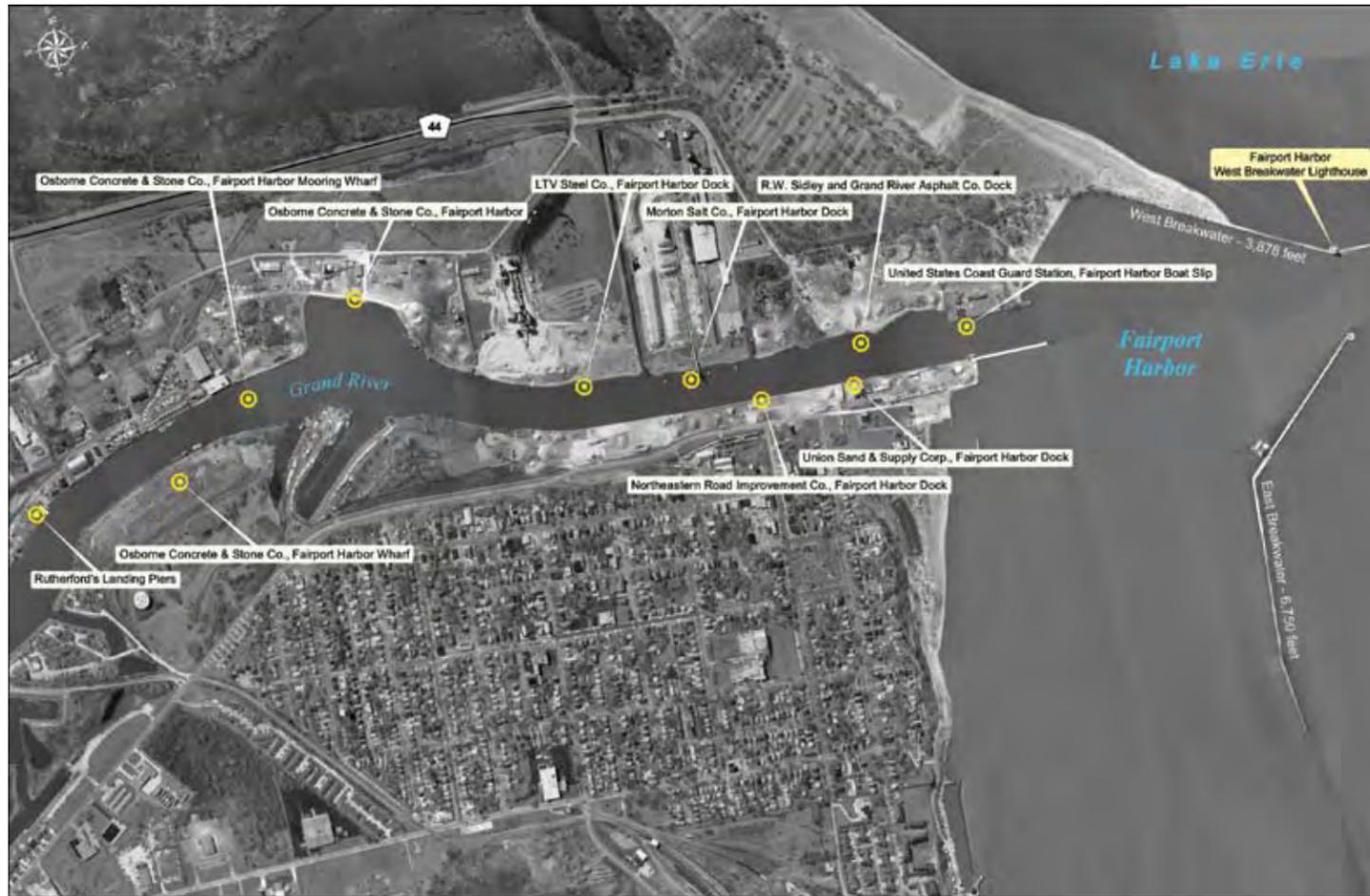
*Lake Erie port in Cleveland*



*Freight vessel, Cleveland – Photo by Cleveland-Cuyahoga County Port Authority*

*Unloading freight, Cleveland – Background photo by Cleveland-Cuyahoga County Port Authority*

# Port of Fairport Harbor



Grand River Ports  
Map 63 GIS data citation in Appendices

Originally named Grandon because of its location at the mouth of the Grand River, Fairport Harbor was later renamed to its present name because of its outstanding harbor. The town's citizens first initiated port development and activity at Fairport Harbor in 1823. In 1825, federal funding boosted expansion with a \$1,000 endowment from Congress and the construction of the lighthouse.

Some of the first commodities to be exported from Fairport Harbor included meat, dairy products, eggs and pickles. Various imports ranged from shoes and textiles to tea and coffee. Fairport Harbor's expansion continued in 1885

when additional docks were built and a standard-gauge railroad was extended to Pittsburgh.

Today, Fairport Harbor is one of only two U.S. Great Lakes ports to ship salt; Cleveland is the other. Salt deposits under Lake Erie are remnants of a gigantic saltwater sea that inundated the area approximately 400 million years ago. In close proximity to the harbor, a 2,000 foot deep salt bed (the deepest in the country) extends beneath the lake.

Fairport Harbor is about 29 miles northeast of Cleveland Harbor. It comprises an outer harbor, and an inner harbor formed by the lower mile of the Grand River. Fairport Harbor has

numerous wharves and docks in the Grand River. Goods imported to Fairport Harbor include limestone, sand and gravel.

Fairport Harbor is also home to one of the U.S. Coast Guard 9th District's stations.

**Latitude:** + 41.7599 North  
**Longitude:** - 81.2804 West

#### For more information:

Fairport Harbor Port Authority  
301 ½ High Street  
Fairport OH 44077  
Tel: 440-350-0975  
Fax: 440-350-0975  
Lake County  
Web: lakecountyohio.org/cities/fairport/fairport.htm

## Salt Mines under Lake Erie

Ohio is one of the top salt-producing states in the nation, mining nearly 4 million tons of salt a year, and has a salt supply underground to last thousands of years.

Rock salt deposits in Ohio were formed during the Silurian Period, nearly 410 million years ago, when a warm, saline sea covered what is now eastern Ohio. As that sea evaporated, it left behind layers of salt deposits, some up to 50-feet thick.

As one of the world's most important minerals, salt was so valued by ancient civilizations that they used it as a form of money. In fact, the word "salary" comes from the Latin word "salarium" meaning "salt allowance."

Salt was the first mineral to be mined in Ohio. Records dating back to the 1700s show that early settlers made salt at natural salt springs in southern Ohio. In the late 1800s, prospectors drilling for natural gas near Cleveland discovered vast rock salt deposits extending out under the central basin of Lake Erie and most of eastern Ohio. Initially the salt- or halite- was extracted as brine, but

in the late 1950s salt mines were developed under the lake.

To mine salt, machinery undercuts large blocks of salt, which are then blasted from the wall. As rock salt is removed, large cavern-like rooms are left behind, with equally large pillars of salt to support the ground above. These light airy rooms are 18 to 20 feet in height, feature extremely low humidity and maintain a constant temperature of 63-78 degrees, depending on the season. While still underground, the blasted chunks of salt are crushed. After crushing, the salt is transported by conveyor belts to salt "pockets" at the shaft bottom for loading and hoisting to the surface. Two counter-balanced salt skips of up to 20 short tons each are loaded automatically for the 1,000 ft/min trip. Most rock salt from underground mines in North America is transported in bulk by ship, barge, truck, or rail.

Today, nearly 2,000 feet below the surface, Ohio is home to two active rock salt mining operations: Cleveland and Fairport Harbor.

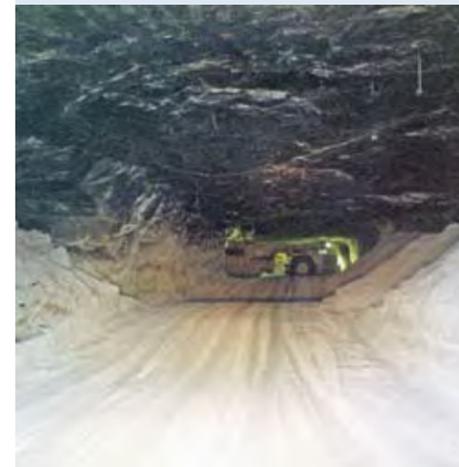
The entrance to the Cargill Salt Mine in Cleveland is located near the mouth of the Cuyahoga River on Whiskey Island. The International Salt Company established the Cleveland mine in 1961. Cargill Deicing Technology has operated the mine since 1997. The two main shafts in operation at Cleveland today are nearly 2,000 feet deep, and mining takes place in a 9,000 acre reserve lying beneath Lake Erie.

The Morton Salt Company also uses the second oldest method of producing salt, underground mining, at its Fairport Harbor site. In 1999 Morton was acquired by Philadelphia-based Rohm and Haas Company, Inc. and operates as a division of that company today.

Salt from Ohio's mines is used primarily for ice control on Ohio streets and highways.

#### Sources:

Web: saltinstitute.org/14.html  
Web: mortonsalt.com  
Web: cargilldeicing.com/about/dc\_dt\_prod\_clev.pdf  
ODNR Ohio Outdoor Notebook, Winter 2003



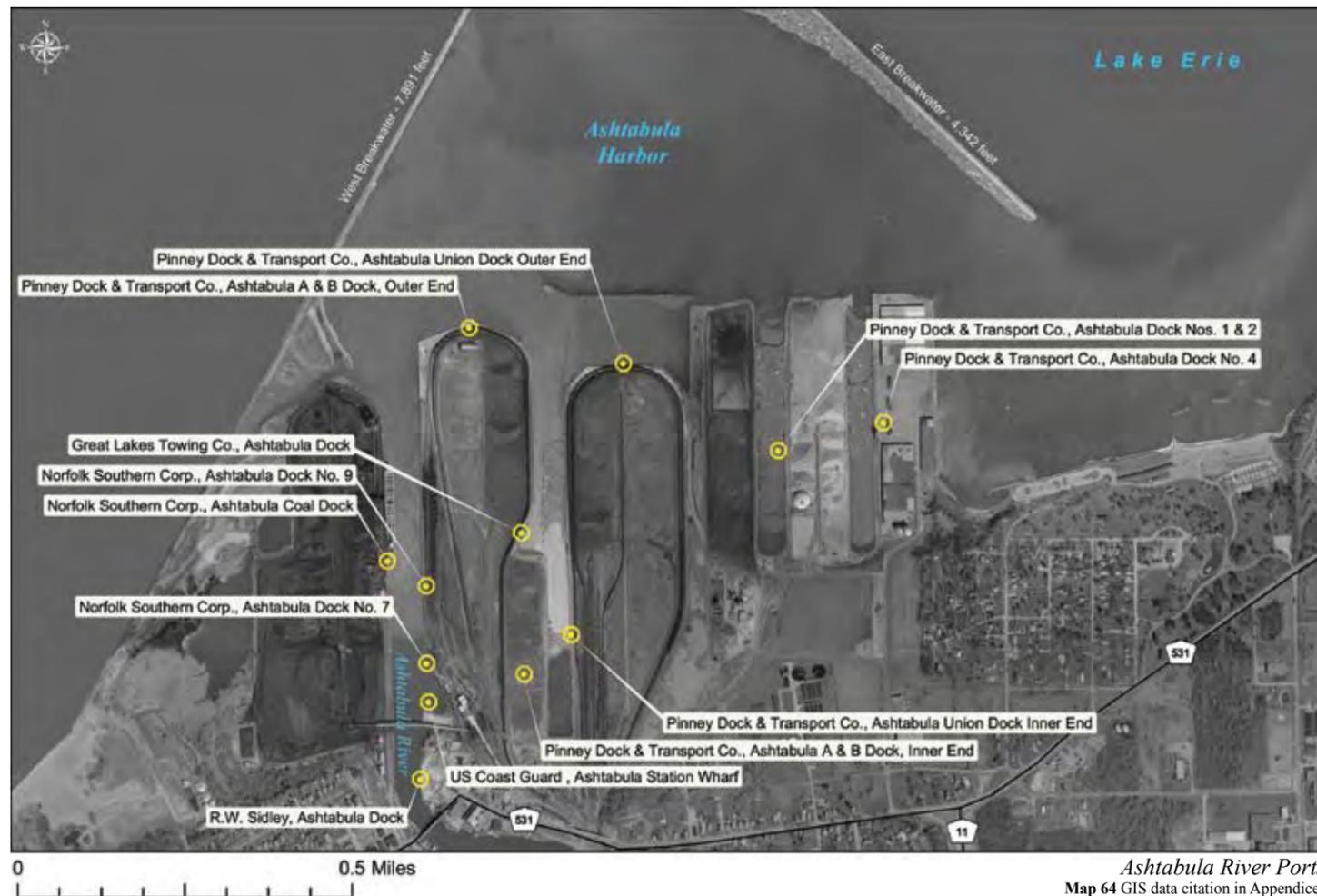
Morton Salt, Fairport Mine



Salt mines under Lake Erie are located in Fairport Harbor and Cleveland



# Port of Ashtabula



The Port of Ashtabula has been a large ore and coal port since the end of the 19th century. The current harbor is one of the largest coal and iron ore ports on the Great Lakes in terms of tonnage shipped. The port leads Ohio's coal shipment five-year average (2000-2004) with 5.73 million net tons per year, according to the Lake Carriers' Association. Ashtabula, which means "river of many fish" in the Iroquois language, generally receives more iron ore and rubber than any other lake port.

Located at the conflux of Lake Erie and the Ashtabula River, this port is about one hour east of Cleveland and one hour west of Erie, Pennsylvania. The

entire harbor is dredged and chanelized to the highest Great Lakes' standards, enabling the docks to serve vessels of any size.

During World War II, Ashtabula received more iron ore than any place else in the world. Workers unloaded the ore from Minnesota and shipped carloads by rail to steel mills in Youngstown, Wheeling and Pittsburgh. Freighters didn't have to return empty-handed. Coal from mines in Ohio, Kentucky, Pennsylvania and West Virginia was shipped to Ashtabula and loaded onto freighters for delivery to the Upper Great Lakes.

Today, three companies actively

work the dock area. The coal and iron ore dock is operated by the Norfolk and Southern Corporation. They consider the Ashtabula dock a modern coal transshipping facility serving as a transload point for coals destined to electric generating utilities and cement producers in Canada and the Great Lakes Basin. The dock can handle all lake-sized vessels and annual throughput capacity is seven million tons. Bituminous coals from Ohio, Pennsylvania and West Virginia arrive at Ashtabula in unit trains where it is then rotary dumped from the rail cars and either stored on the ground or loaded directly into self-unloading vessels for further shipment to Canadian

and domestic destinations. Storage is available for up to 1.2 million tons of coal, thus permitting year-round unloading. This allows producers to ship coal during the winter months when the lakes are closed.

The Pinney Dock & Transport Company is the largest privately-owned dock on the Great Lakes. This company handles a full range of commodities and cargo ships from all over the world. Three slips and six docks totaling 15,000 linear feet of vessel berthing space, accommodate even the large supercarriers (1,000-foot-long ships that routinely deliver almost 70,000 tons of coal each trip – enough product to keep a large steel mill operating for five days). More than 200 acres of adjacent storage space and storage domes can be used for such items as limestone, taconite, agricultural potash and various other cargoes.

Sidley's Ashtabula Dock is also located on the Ashtabula River south of the Norfolk Southern Dock. Commodities hauled include crushed limestone and sand.

**Latitude:** + 41.9089 NORTH  
**Longitude:** - 80.7985 WEST

#### For more information/Sources:

Norfolk Southern Corporation  
110 Franklin Road  
Roanoke VA 24042-0026  
Phone: 540/985-6795  
Fax: 540/985-6398  
E-Mail: RandyCarter@nscorp.com  
Web: nscorp.com/nscorp

Pinney Dock and Transport LLC.  
1149 East Fifth Street - P.O. Box 41  
Ashtabula OH 44005-0041  
Tel: 440-964-7186  
Web: pinneydock.com

Freighter at Ashtabula Harbor,  
Ashtabula County



Large dragline, Ashtabula Harbor



Conneaut Creek Ports  
Map 65 GIS data citation in Appendices

Conneaut Harbor was the first Great Lakes port to ship coal to Europe via trans-shipment facilities in Canada. This opened the European market for Great Lakes trade and boosted the marketability of Great Lakes ports. The port, just 13 miles east of Ashtabula, was also the location of the first Hulett Ore Unloader built in 1899.

Today, Conneaut is one of the most frequented ports on Lake Erie. Combined, Toledo, Sandusky, Ashtabula and Conneaut represent the largest segment of the Great Lakes coal trade. In a typical year, 19.6 million of the

41.5 million tons of coal shipped on the lakes originate at these Lake Erie ports. Based on a five-year average (2000-2004), Conneaut ships 5.67 million net tons of coal per year, according to the Lake Carriers' Association.

Iron ore was not the first commodity to use Conneaut Harbor. As early as 1837, two piers and a lighthouse aided vessels exporting lumber, grain and whiskey. Railroads entered the scene in 1852 increasing harbor activity as it provided the movement of goods from inland Ohio, West Virginia and Pennsylvania to ports throughout the Great Lakes.

Today, Conneaut receives shipments of iron ore, limestone and salt at its docks and primarily ships coal.

**Latitude:** + 41.9704 North  
**Longitude:** - 80.5490

**For more information:**

Conneaut Port Authority  
P.O. Box 218  
Conneaut OH 44030  
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Web: [conneautportauthority.com](http://conneautportauthority.com)

## Hulett Ore Unloader

The Hulett Automatic Ore Unloader was invented by George H. Hulett, a Conneaut native who moved to Cleveland with his family when he was 12. Mr. Hulett received the patent for this invention in 1898 and the following year the first working model was built at Conneaut Harbor. It was constructed by the Webster, Camp & Lane Company of Akron.

The Hulett Automatic Ore Unloader became an essential element in the development of the iron ore industry in Ohio, allowing rapid unloading of cargoes and increasing the volume and efficiency of ore docks at Ohio ports such as Ashtabula, Cleveland, Conneaut, Huron, Lorain and Toledo. Previous methods of unloading lake freighters, involving hoists and buckets and much hand labor, cost approximately \$0.18 per ton. Unloading with a set of Huletts cost \$0.05 per ton. With 10 to 17-ton capacity buckets, standing some 10 stories tall and weighing 880 tons, Huletts could unload an ore boat in 5 to 10 hours (one 10-ton bucket load per minute), as opposed to days for previous methods.

Huletts were first powered by steam and later electricity. The unloaders ran on two sets of parallel tracks along the face of the docks, one near the edge and one farther back, with normally enough distance for four sets of railroad tracks in between. Steel towers, riding on wheeled trucks, supported girders that ran from front to back, perpendicular to the dock face. The Hulett moved along the dock to line up with the various holds on an ore boat. Once the hold was mostly empty, the Hulett could not easily finish the job itself. Early on, workmen would descend into the hold and shovel the remaining ore into the Hulett's bucket; later on, a wheeled excavator would be carried aboard inside the Hulett's bucket to fill the Hulett. Lake boats also changed to accommodate the Hulett unloader, and became much larger, doubling in length and quadrupling in capacity.

Approximately 75 Huletts were built, mostly on the Great Lakes, particularly Lake Erie.

At one time, eight Huletts operated in the Ashtabula Harbor and many photographs exist of the four that graced Cleveland's Whiskey Island. One Hulett was installed in New York City to unload garbage; however, Huletts were unsuited to salt-water environments because they could not adjust for rising and falling tides, so few were used.

Huletts remained in use with few changes until 1992 when self-unloading boats were introduced. Most of the massive machines have now been disassembled.

**Sources:**

Great Lakes Industrial History Center  
Web: [ulib.csuohio.edu/SpecColl/glihc/hulett/](http://ulib.csuohio.edu/SpecColl/glihc/hulett/)  
Engineering News, v. 54, no. 5, Aug. 3, 1905.  
New York: The Engineering News Publishing Company. pp. 125-126.  
Wikipedia  
Web: [wikipedia.org/wiki/Hulett](http://wikipedia.org/wiki/Hulett)



Conneaut Harbor port activity



A massive Hulett Ore Unloader arm on display at Point Park

# Bridges in the Coastal Region

## Bridges

Everyday travel through northern Ohio involves crossing rivers, creeks and streams. While some of these crossings go relatively unnoticed by motorists pushing the speed limit, other bridges in the Lake Erie Watershed make one stop and take note of common structures that shorten travel time for those on top and keep the water body open to boat and ship traffic below.

### Charles Berry Bridge

#### Location:

The Charles Berry Bridge crosses the Black River in the city of Lorain.

#### Route Designation:

US Route 6 (Erie Avenue).

#### History:

The Charles Berry Bridge was built in 1940. When completed, it was the largest bridge of its kind in the world. Today, the 1,052-foot bridge is the largest “double-leaf” bascule style bridge in the country and third largest in the world. A bascule bridge is a drawbridge with a counterweight that continuously balances the span, or “leaf,” throughout the entire upward swing in providing clearance for boat traffic. A double-leaf structure means that two sides of the bridge open (one pivot on the eastern bank and one on the western bank).

The Charles Berry Bridge was originally named the “Erie Avenue Bridge.” The bridge was officially renamed on Veterans Day in 1988. Charles Berry was a local Marine hero and Congressional Medal of Honor recipient who died in the battle of Iwo Jima.

*Background Photo - Main Avenue Bridge, Downtown Cleveland*

### Thomas A. Edison Memorial Bridge

#### Location:

The Thomas A. Edison Memorial Bridge crosses Sandusky Bay. It is one of only two bridges to cross the bay, the other being the Norfolk-Southern Railroad bridge located farther east. The bridge connects Danbury Township in Ottawa County and the village of Bay View in Erie County.

#### Route Designation:

State Route 2 and State Route 269.

#### History:

The four-lane divided-highway Thomas A. Edison Memorial Bridge and causeways were built in 1960 to replace the old Bay Bridge formerly located farther east. The Memorial Bridge and causeway are nearly 3.5 miles long, with the bridge itself measuring 2,049 feet or just over one-third mile.

On some winter days, wind speeds along the stretch reach upwards of 72 miles per hour, blasting snow across the frozen Sandusky Bay and decreasing visibility to just a few feet. However, even if the sheriff offices in both Erie and Ottawa counties issue the highest road warning levels, drivers can still drive across the bridge. That is because unlike



*Edison Bridge, Erie and Ottawa Counties*

the causeway approaches, the actual bridge portion is not part of any county and only closes when a severe crash takes up all lanes of traffic, according to the State Highway Patrol Sandusky Unit.

A scan tower on the bridge measures the wind speed, precipitation and air temperature. There is also a sensor resembling a big gray hockey puck that measures how much salt has been distributed on top of it. Permanent signs hang above SR 2 on both sides of the causeway warning drivers when poor road conditions exist on the bridge. Ohio Department of Transportation (ODOT) webcams also provide live shots of the bridge and causeway in northern and southern directions.

The old Bay Bridge was a two-lane connection with a lift in the center and remained in operation as SR 269 into the 1990s when the bridge was removed. The old Bay Bridge’s causeway approaches remain open as fishing locations. The southern terminus is accessible from Bay View Drive in downtown Bay View and the northern terminus is accessible from Bay Shore Road in Danbury Township. The northern section, denoted as “Sandusky Bay Bridge Access,” is managed by the ODNR Division of Wildlife.

### Veteran’s Glass City Skyway Bridge (Maumee River Crossing Project)

#### Location:

The Maumee River Crossing, when completed, will span the Maumee River in Toledo.

#### Route Designation:

Six lanes of Interstate 280

#### History:

Construction of the I-280 bridge began in spring 2001 and its completion is scheduled for late 2006. With a price tag of \$220 million, it is renowned as ODOT’s largest and most expensive single project ever.

The Veteran’s Glass City Skyway will be a cable-style bridge structure with a single pylon in the span’s center. The pylon will incorporate glass in the design. Cable stays will fan out from the pylon and connect with the roadway plane for support.

The new Maumee River Crossing will reach 130 feet above the center of the Maumee River. The top of the center pylon will be nearly 404 feet above water level, and will be Toledo’s second tallest landmark. Only the Owens-Illinois Building is taller at 440 feet tall.

### Veterans Memorial Bridge

#### Location:

Veterans Memorial Bridge crosses the Cuyahoga River in Cleveland. It connects Detroit Avenue on the west bank in Cleveland’s Ohio City neighborhood and Superior Avenue on the east bank in downtown Cleveland.

#### Route Designation:

US Routes 6, 20 and 42.

#### History:

The Veterans Memorial Bridge first opened to the public on Thanksgiving

Day in 1917 as the “Detroit-Superior Bridge.” It was Cleveland’s first high-level bridge to traverse the Cuyahoga River valley and came with a \$5.3 million price tag. The Veterans Memorial Bridge was built to replace the old Superior Viaduct, which was too congested for automobile traffic. The western segment of the Viaduct remains intact and portions of it have been developed.

The Veterans Memorial Bridge is 3,112 feet long. The bridge’s focal feature is its 591-foot-long steel arch frame which bows high above the road surface. The bridge has two levels. The top deck is for automobile traffic and the bottom deck, the “subway” deck, was originally for streetcars. The lower level was closed in 1955, a year after Cleveland’s streetcars were phased out of service.

For a time in the 1930s, the Veterans Memorial Bridge was heralded as “the nation’s busiest” bridge with 70,400 automobiles crossing daily. In 1976 it was placed on the National Register of Historic Places, and on Veterans Day of 1989, its name was changed from the Detroit-Superior Bridge to the current name. In 2004, one lane of westbound traffic was eliminated to make room for a pedestrian and bicyclist walkway and other aesthetic improvements, including pedestrian canopy shelters, seating, light fixtures and artwork.

### West Fifth Street Bridge

#### Location:

The West Fifth Street Bridge crosses the Ashtabula River in downtown Ashtabula.

#### Route Designation:

SR 531 (Bridge St, a.k.a. West Fifth St).

#### History:

The West Fifth Street Bridge was built in 1925. It is a “single-leaf” bascule

(French word for “see-saw”) style lift bridge. It features a movable span which rotates on a horizontal hinged axis to raise the entire road portion vertically. A large counterweight, fixed above the road on the eastern bank is used to offset the opposite side (the road portion). The West Fifth Street Bridge is one of only five single-leaf bascule bridges in the country still in operation. One other, a railroad bridge, is also located in the city of Ashtabula. The West Fifth Street Bridge is listed on the National Register of Historic Places.

#### Sources:

Ashtabula.com  
Web: ashtabula.com

Cuyahoga County Engineer’s Office, Web: cuyctyengineers.org

The Encyclopedia of Cleveland History, maintained by Case Western Reserve University; Web: ech.cwru.edu/index.html

Historic Ashtabula Harbor  
Web: ashtabulaharbor.org

Lorain County Commissioners  
Web: loraincounty.us

Look Up, Toledo  
The Maumee River Crossing  
Web: lookuptoledo.org/

Ohio Department of Transportation  
Web: odotonline.org/

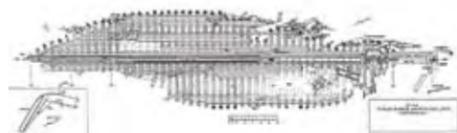
ODOT, Maumee River Crossing Information  
Web: dot.state.oh.us/dist2//mrc/mrc.htm

Sandusky Register article, “Edison Bridge” March 11, 2001

# Lake Erie Shipwrecks



*The Adventure* – Photo from Peachman Lake Erie Shipwreck Research Center



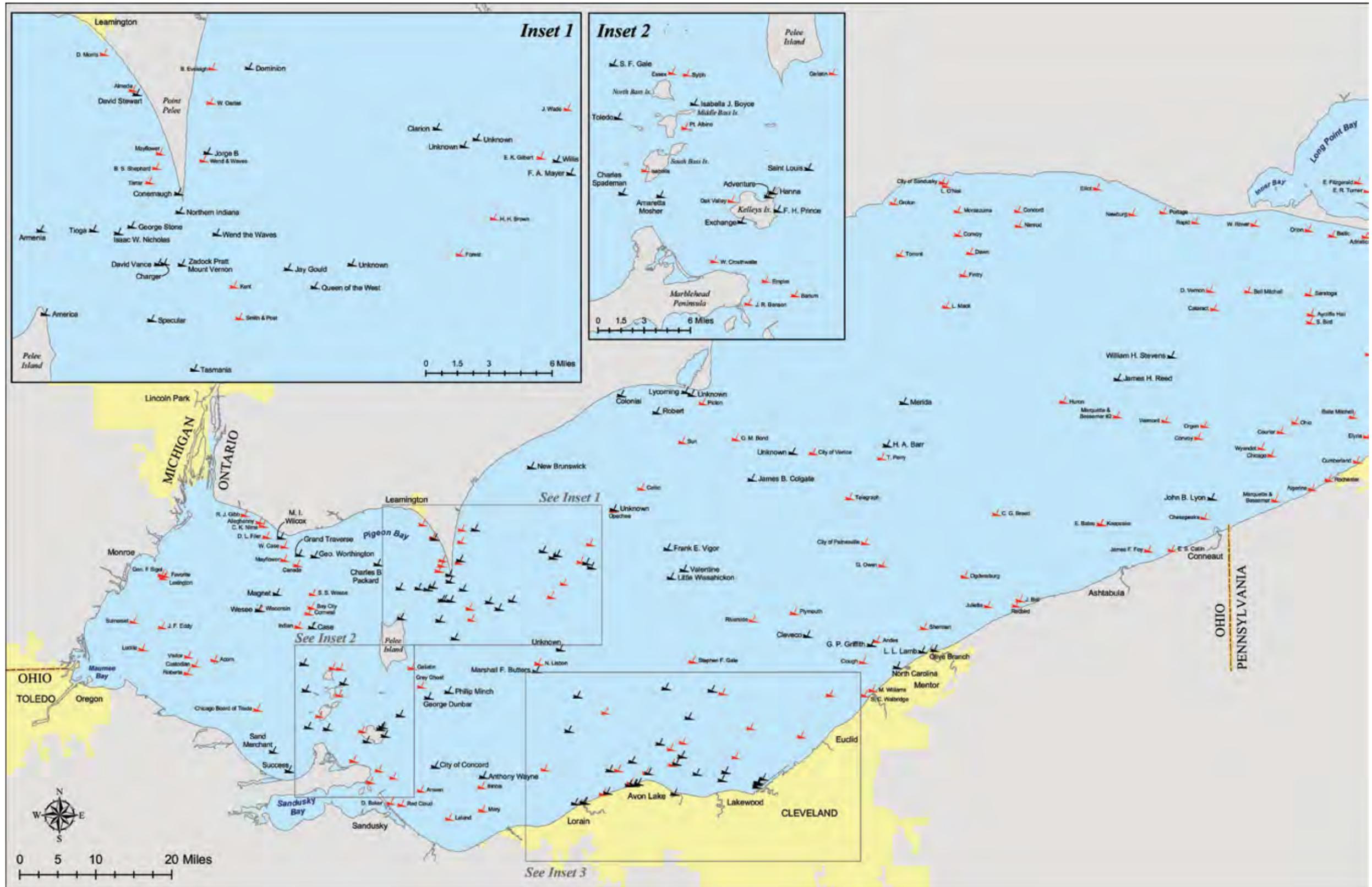
*The Adventure* site plan. Site plan completed by MAST



Sunken tug boat, Toledo

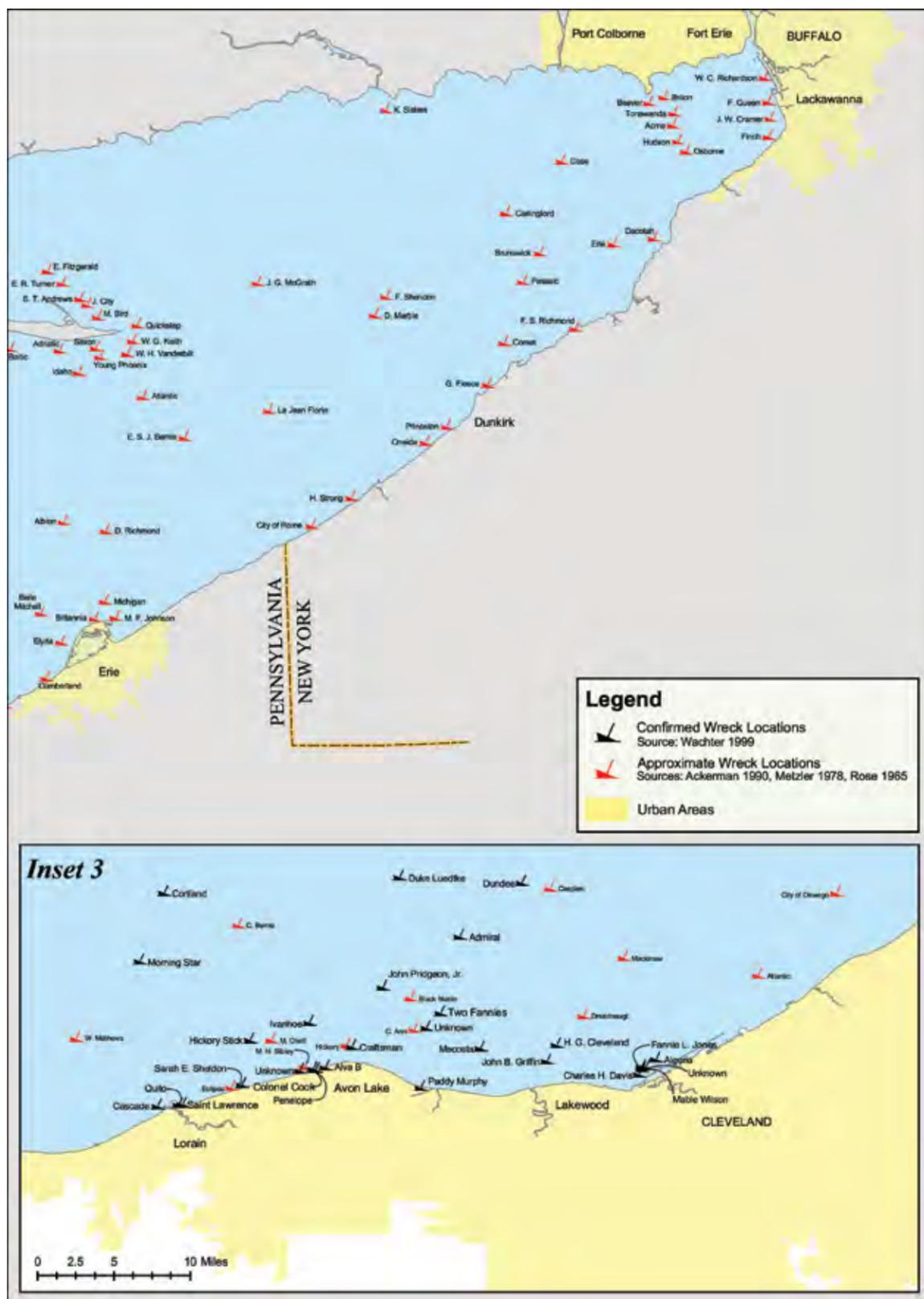


Inland Seas Maritime Museum, Vermilion



Map 66 GIS data citation in Appendices

# Lake Erie Shipwrecks



Map 66 GIS data citation in Appendices

Shipping on Lake Erie is a long-standing tradition and economic necessity for many businesses based on the lake and tributaries. Until the early 20th century, large passenger ships were also the primary means of human transportation.

And where wind and waves collide with sails and ships, there will be accidents. Mishaps causing ships to sink range from weather and crew mistakes to the slightly abnormal and unknown. Researchers at the Peachman Lake Erie Shipwreck Research Center have identified at least 1,750 ships (not all mapped) known to have met disaster in Lake Erie waters since the late 17th century. There are likely many more sunken vessels whose past has yet to be uncovered. It is an ongoing adventure to continue identifying these tales from the lake's sunken past.

Each shipwreck tells a different story. Of the 1,750 known shipwrecks on Lake Erie, about 600 vessels sank in Ohio waters. But of all known wrecks, only about 245 have been discovered and positively identified; 60 of those in Ohio waters. It is likely that many known wrecks will never be found. Some were salvaged at the time of sinking, others were re-floated and sailed again, and some were dynamited to prevent future hazard to other freighters. Still others have broken apart and have since been buried by the sands of time.

This map shows some known wrecks in Lake Erie. Not surprisingly, there are patterns or concentrations of shipwrecks found where ships most frequently traveled. Cleveland, a major port on Lake Erie, is one such area. Another large conglomeration of wrecks is found along the main shipping lane between Pelee Island and Point Pelee because just a few feet out of the lane large ships can easily become grounded.

Several groups have been actively involved in studying these wrecks and are accumulating information on vessels listed in the Ohio Archaeological Index. Currently, only four of Ohio's 60 positively

identified shipwrecks are listed in the Ohio Archaeological Index as archaeological sites including the *Adventure*, the *W.R. Hanna*, the *F.H. Prince* and the *Craftsman*.

The first of these four vessels to be studied was the schooner and steam barge *Adventure* which sailed the lake from 1875-1903. The *Adventure*, along with the *W.R. Hanna* and the *F.H. Prince* were all studied and mapped by volunteers from the Maritime Archeological Survey Team (MAST) in 2002. Subsequently sturdy plastic, waterproof underwater guides were created for each of the shipwrecks featuring a site map, schematic diagram, diving information, vessel data and ship history. These guides won the Sea Grant Blue Ribbon Award for Partnership in 2003. A similar dive slate is being planned for the *Craftsman*, a barge that sank in 1958 in 40 feet of water one mile north of Avon Point. Divers from MAST mapped the converted derrick scow and crane in 2004.

Currently there is a strong movement to educate SCUBA divers about the wealth of information that these sites can give investigators. Many sport divers are actively involved with a program designed to perform research, survey wrecks, and educate the public about these submerged cultural resources.

Shipwrecks are not only for SCUBA divers. Many organizations are taking an active interest in what is under the water. Representatives from the Great Lakes Historical Society and the Maritime Archeological Survey Team have been educating Ohioans about wrecks and geological features found there for many years. The Great Lakes Historical Society Inland Seas Maritime Museum, in Vermillion, has a large interactive exhibit dedicated to Lake Erie shipwrecks for everyone to glimpse Ohio history that sank beneath the lake.

To aid in the preservation of this precious underwater link to Ohio's past, the state's legislature passed what is known as the Ohio Shipwreck Law in 1992. One purpose of

Ohio Revised Code Section 1506.30-1506.99 is that divers are to take only pictures and leave only bubbles. When diving Ohio's wrecks, it is illegal to recover items without the proper permits. The law also governs management of certain submerged property, provides a procedure for the issuance of salvage permits where appropriate, and provides procedures for designating underwater preserves.

#### For more information:

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